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Lafayette, IN

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16. ABSTRACT

Atmospheric deposition of acid and other materials may pose a significant threat to some soils and the ecosystems they support. The project objective was to develop maps of the eastern United States that delineate soil areas according to their expected sensitivity to the effects of acid precipitation. Four parameters are important in estimating soil sensitivity to acid precipitation: (1) the total buffering capacity or cation exchange capacity; (2) the base saturation; (3) the management system imposed on the soil; and (4) the presence or absence of carbonates in the soil profile. Cation exchange capacity was chosen as the primary criterion for classifying the soil regions into non-sensitive, slightly sensitive, and sensitive areas. The North Central States were found to contain, generally, non-sensitive to slightly sensitive soils. The Northeastern States include large regions of slightly sensitive to sensitive soils, and the Central States feature large portions in the slightly sensitive category with varying degrees of inclusions. Maps of these distributions have been prepared for individual states and for the entire eastern United States.

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SENSITIVITY OF SOIL REGIONS TO ACID PRECIPITATION

by

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DISCLAIMER

One of the principal reasons for the preparation of this report for the Environmental Protection Agency was to supply scientifically valid information which could be incorporated into the EPA SO_2-Particulate Matter Criteria document, presently in the final stages of preparation. A strict requirement pertaining to that document is that any scientific information used there must be published (or at least in press) by January 1, 1980. Because of this demanding time constraint, it was necessary that the contractor prepare this report in a shorter time than would ordinarily be attempted, and that it be published by EPA without undergoing peer review. We feel that early publication of these results in order to stimulate the broadest scientific discussion prior to completion of the criteria document justified waiving our normally more rigorous prepublication review requirements. Publication, however, does not signify that the contents necessarily reflect the views and policies of EPA, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

FOREWORD

Effective regulatory and enforcement actions by the Environmental Protection Agency would be virtually impossible without sound scientific data on pollutants and their impact on environmental stability and human health. Responsibility for building this data base has been assigned by EPA's Office of Research and Development and its 15 major field installations, one of which is the Corvallis Environmental Research Laboratory.

The primary mission of the Corvallis Laboratory is research on the effects of environmental pollutants on terrestrial, freshwater, and marine ecosystems; the behavior, effects and control of pollutants in lake and stream systems; and the development of predictive models on the movement of pollutants in the biosphere.

This report is concerned with the sensitivity of soils to acid precipitation. Maps of potential sensitivity for the eastern United States are presented.

Thomas A. Murphy
Director
Corvallis Environmental Research Laboratory

ABSTRACT

Criteria for ranking soil sensitivity to the effects of acid precipitation are discussed. A ranking scheme based on cation exchange capacity and presence or absence of carbonate in the top 25 cm of soil and presence or absence of flooding was devised. Five map units varying in potential sensitivity and percentage of the area considered sensitive were used to map the eastern U.S.. Maps of 27 eastern states and a generalized map of the eastern U.S. were prepared. It is recognized that other factors could be considered to improve the ranking scheme and that land use, which is ignored in these maps, has an effect overshadowing that of acid precipitation. The maps should be useful in research planning and in selecting areas for intensive study. The ranking of sensitivities is not intended to predict severity of effects but to guide the selection of terrestrial and aquatic sites to areas where the potential for adverse impacts of long term atmospheric deposition are the greatest. The need for field testing of the system is obvious. The areas that are potentially sensitive are concentrated in the southeastern United States on highly weathered soils, on the shallow and steep soils of the Appalachian Highland regions in the Adirondack Mountains, and on the coarse, non-basic tills of New England.

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INTRODUCTION

Several networks of atmospheric deposition stations are gathering conclusive data showing that eastern United States and Canada receive acid precipitation. There is a potential for deleterious effects of this acid on both terrestrial and aquatic ecosystems. Only limited information on the effects on aquatic systems is available and essentially none is published on effects of soils and plants in naturally occurring (field) terrestrial ecosystems. Since acid precipitation is so widespread and the potential harm is subtle, there is a need to concentrate our research efforts in areas most likely to be susceptible.

Soils are continually changing, yet remain one of the most stable components of terrestrial ecosystems. The formation of soil horizons of significant depth by weathering processes starting from rock or even unconsolidated deposits requires thousands or even millions of years. On the other hand, significant changes in root length occur in a few weeks and changes in bacterial numbers within days or even hours. In general, however, soils are very resilient. They tolerate large inputs of sundry materials and retain, or within a short time, revert to their original condition. This apparent stability sometimes lulls us into a false sense that soil productivity is indestructible. We are dependent upon the soil's ability to support cycle after cycle of vegetation in both natural and cultivated systems which produce the vast majority of our food and fiber. Lessons that date to antiquity in some parts of the world and at least into the 1930's in the United States taught that soils are vulnerable to erosion. Present knowledge is not adequate to predict the degree of adverse effects of acid deposition on soils, but we should not assume that soils will not be damaged by agents other than wind and water.

Sulfur deposition to soils is not all bad. It is, in fact, frequently needed and if the deposition were all $CaSO_4$, it is doubtful if harmful effects would be noticed anywhere in terrestrial ecosystems, but since much of the sulfate is balanced by hydrogen ions, the input is a dilute strong acid which has considerable potential for affecting the system. Atmospheric deposition of acid and other materials may pose a significant threat to some soils and the ecosystems they support. In recent reports, some of the known and expected effects of acid precipitation have been summarized as follows, (Wood, 1979; Hutchinson, 1979; Galloway, Cowling, Gorham, McFee, 1978):

1. Natural soil-formation processes in humid regions lead to acidification and acid precipitation accelerates this process.
2. The sensitivity of soils to acidification by acid precipitation depends on the soil buffer capacity and pH. Noncalcareous, sandy soils with $pH>5$ are the most sensitive to acidification.
3. Very acid soils are less sensitive to acidification. However, even a slight loss of nutrients by leaching may be detrimental.
4. Acid inputs increase leaching of exchangeable plant nutrients.
5. Acidification slows many soil microbiological processes, such as N fixation, decay of plant residues and nitrification.
6. Acid precipitation increases the leaching losses of Al which may be detrimental to associated aquatic environments.
7. Amendments used in field crop production have a large effect on soil acidity and overshadow acid precipitation influences on most cultivated soils.
8. There are large uncultivated areas that have soils that are poorly buffered and potentially sensitive to acid precipitation.

There are other known and suspected effects of acid precipitation in the cited references, however, this report is concerned with the regions where most of the sensitive soils (item 8 above) occur.

The sensitivity of soils to the effects of acid precipitation has been discussed by several authors. Wiklander (1973/74, 1974) and Bache (1979) have presented excellent descriptions of cation exchange reactions involved in soil acidification and described the relationship of buffering capacity, base saturation, and "lime potential" to soil susceptibility to acidification. Reuss (1975) and McFee and Kelly (1977) have pointed out the importance of N and S transformations in influencing soil acidity and the slowness of acid precipitation in changing soil. In all of these discussions, it is apparent that the four parameters which follow are important in estimating soil sensitivity to acid precipitation:

1. The total buffering capacity or cation exchange capacity provided primarily by the clay and soil organic matter.
2. The base saturation of that exchange capacity which can be estimated by the pH of the soil.
3. The management system imposed on the soil, is it cultivated and amended with fertilizers, lime, or renewed by flooding or other additions.
4. The presence or absence of carbonates in the soil profile.

The objective of this project was to develop maps of the eastern United States that delineate soil areas according to their expected sensitivity to the effects of acid precipitation.

CONCLUSIONS

When generalized to a scale suitable for the eastern United States, the areas containing most of the soils that are potentially sensitive to acid precipitation are in the upper coastal plains and Piedmont regions of the southeast, along the Appalachian Highlands, through the east central and northeastern areas, and in the Adirondack Mountains of New York. Areas considered most sensitive usually appear as small areas with less sensitive regions and are too small to show on maps of the eastern U.S.. Numerous such areas are mapped on state maps in New York around the Adirondack Mountains, in mountainous regions of West Virginia and Pennsylvania, and in the well drained sandy coastal plains of North and South Carolina.

The somewhat arbitrary criteria established here (i.e., 25 years of input of acid must exceed 10 and 25% of CEC in 25 cm of soil in order for the soil to be considered slightly sensitive or sensitive, respectively) led to extensive areas being declared potentially "slightly sensitive" and only a very small area "sensitive." These criteria need field testing before further mapping of this type is performed.

The soil association maps and chemical data available for some states were not adequate for such a mapping exercise and some inconsistencies and state-line irregularities resulted. Most of the state maps are useful for getting an overview and should aid in selecting areas for ecosystem studies. They should be used in conjunction with land use maps since agricultural amendments to soil will overshadow acid precipitation effects.

METHODS

The first step was to define "sensitivity" as it is used here in relation to soils and acid precipitation. Sensitivity of soils to acidification, alone, seemed too narrow even though that may be the most important long term effect. Soils influence the quality of waters in associated streams and lakes and may be changed in ways other than simple pH-base saturation relationships, e.g., microbiological populations of the surface layers, accelerated loss of Al by leaching. Therefore, criteria were sought that would relate to soil "sensitivity" to any change brought about by acid precipitation that would be important in the local ecosystem.

RATIONALE FOR SENSITIVITY CLASSES

Factors affecting sensitivity to acid inputs in the list above were evaluated for their wide applicability and ready availability for use in broad scale mapping. As pointed out earlier, management that includes amendments will mask effects of acid precipitation and should be considered in the final analysis. We chose to ignore land use in this effort with the intent of eventually overlaying land use maps on the soil maps. Most of the serious soil effects are tied to changes in pH or changes in leaching. The soil's susceptibility to changes in either of these is most closely tied to its cation exchange capacity (CEC). If the soil has a low CEC and a circumneutral pH, then acid inputs are likely to reduce pH rapidly. A soil with a high CEC is strongly buffered against changes in pH or leachate composition. Acid soils, pH near that of the acid precipitation, on the other hand, will not change in pH rapidly in response to acid inputs, but are likely to release Al^{+3} ions in the leachate. Further, soils with a low CEC have a low reserve of plant nutrients and slight losses may be significant to their productivity. Therefore, even though it is apparent that CEC, or buffering capacity, does not completely define the soil sensitivity to acid inputs, it was chosen as the primary criteria in this attempt at regional mapping of soil sensitivity to acid precipitation. Soils that contain free carbonates which will react with acid inputs are generally believed to be little affected by acid precipitation and were, therefore, classed "non-sensitive." Likewise, any soil subject to frequent deposition, such as those in floodplains, are unlikely to be strongly affected by acid precipitation.

In much of the literature, it is frequently stated that soils with low CEC or sandy soils with low organic matter are likely to be most susceptible to effects of acid precipitation. However, these "low CEC" values have not been quantified. In order to develop a working set of classes, certain assumptions and "worst case" calculations were made. Since soils are, in general, rather resistant to change by acid inputs, a fairly high acid input was assumed and the question asked, "what is the maximum effect that it could have on soil, and how high would the CEC have to be to resist that effect?"

Arbitrarily, a 25 year span was chosen. If the maximum probable acid input (100 cm of precipitation at pH 3.7 per annum) in that period is equal to 10-25% of the cation exchange capacity in the top 25 cm of soil, a significant effect might occur. This is the case when the top 25 cm of soil has an average CEC of 6.2-15.4 me/100 g (also assumes a bulk density of 1.3 g/cc), and these soils were considered slightly sensitive. If that same acid input exceeds 25% of the CEC in the top 25 cm, i.e., when the CEC is less than 6.2 me/100 g, the soils are considered sensitive.

I am certainly aware that these criteria are arbitrary in many ways, that arguments can be made for different assumptions about inputs, for the use of shallower or deeper depths, for the use of % base saturation, and many other adjustments. However, both our limited knowledge of the effects of acid precipitation on soils and the generalized information available on the distribution of soil associations and their properties make this a reasonable first approach to mapping sensitive soil regions.

SENSITIVITY CLASSES

The following classes were established:

1. Non-sensitive areas (NS): (a) includes all soils that are calcareous (i.e., contain free carbonates) in the surface layers (within 25 cm), (b) includes all soils that are subjected to frequent flooding. It is assumed that the renewal effects of fresh deposition would mask acid precipitation effects, (3) includes all soils with an average CEC greater than 15.4 me/100 g in the top 25 cm.
2. Slightly sensitive areas (SS) includes areas not in 1 (a) or 1 (b) that have average CEC in the range 15.4 to 6.2 me/100 g in the top 25 cm.
3. Sensitive areas (s) includes those areas not in 1 (a) or 1 (b) that have average CEC less than 6.2 me/100 g in the top 25 cm.

MAPPING UNITS

The sensitive areas S and SS are frequently intermingled in the landscape with non-sensitive areas, therefore, an attempt was made to indicate the proportion of the area included within each mapping unit that is a sensitive soil class. The sensitive areas were subdivided and the following five mapping units were used at the most detailed level mapped.

NS - The area contains mostly non-sensitive areas
S1 - Sensitive soils dominate the area
SS1 - Slightly sensitive soils dominate the area
S2 - Sensitive soils are significant, but cover less than 50% of the area
SS2 - Slightly sensitive soils are significant, but cover less than 50% of the area.

SOURCES OF INFORMATION

The distribution of soil associations was either taken directly from state soil association maps, regional soil association maps, or in a few cases, generalized from county maps. The level of detail, scale and age of maps varied widely, and we used our best judgment in smoothing boundaries that were interrupted at state lines. Whatever data we could find concerning cation exchange capacity and other chemical or physical properties of the soils within the associations were utilized to estimate the CEC of the dominant soils of the association. The most frequent source was the chemical data in the "Soil Survey Laboratory Data and Descriptions," series published by the Soil Conservation Service, USDA. In the absence of CEC determinations, we estimated it, based on the soil classification, location and parent material, information given on organic matter and texture, or personal knowledge of the soils. For example, the great group, Quartzipsaments, was assumed to have rather low CEC and placed in the sensitive group when more detailed information was missing. Likewise, sandstone derived soils on sloping areas in rough terrain or sandy outwash terraces would be considered sensitive, whereas a lacustrine deposit or medium to fine textured glacial till plains would be considered nonsensitive if CEC data were unavailable.

MAP PREPARATION

In each state or region, a list of mapping units on the source map or maps was compiled (Appendix A). Then, the available literature was searched for information and each mapping unit assigned a sensitivity rating based on the CEC, or estimated CEC, presence of carbonates and susceptibility to flooding. The dominant soils within an association frequently differed in their rating. If two of the dominant soils, where 2 or 3 were listed, were of the same sensitivity, the numeral "1" was added to the symbol (e.g., SS1 or S1). If only the second of a list of two, or any one of a list of three, was sensitive, an occurrence rating of 2 was assigned (SS2 or S2, indicating a significant but less than 50% occurrence of the sensitive soils in the mapping unit).

A list of the soil maps and references used for soil data is in Appendix B.

The mapping units were, then, drawn on overlays at the same sale as the original soil map used. They were, then, converted to a common 1:2,500,000 scale and compiled into an Eastern United States map. Individual state or region maps were also retained in this report. In some cases, the state maps depict more detail than that transferred to the smaller scale, Eastern United States map.

RESULTS

Maps of each of the states of the Eastern United States (Figures 1 - 27) display the distribution of sensitive soil areas. The amount of detail shown in the various states depends upon the detail available in soil association maps. The smallest areas mapped in most states are on the order of 20 square miles. In using such maps, it must be remembered that every area will have inclusions of other soil types. Most of the mapping units designated "nonsensitive" (NS) will include small areas of "slightly sensitive" (SS) or "sensitive" (S) soils. The reverse is also obviously true. Land use is ignored in making these maps. They are based only on soil features, primarily CEC and presence of carbonates. Land use maps should overlay on these to determine sensitive areas not affected by agricultural practices.

NORTH CENTRAL STATES

The north central region, including Wisconsin, Michigan, Illinois, Indiana, and Ohio, is dominated by soils formed in glacial deposits of relatively young age or water or wind deposits of that same era. Where the deposits are medium or fine textured, the soils are well buffered. Therefore, the region as a whole is nonsensitive to slightly sensitive. The soils likely to be sensitive are concentrated in the northern parts of Wisconsin and Michigan (Figures 1 and 2) on coarse textured glacial deposits, and to a lesser degree, in southern Indiana and Ohio (Figures 3 and 4) on much older, medium textured soils of older glacial or residual origins. The areas in the southern part of the region, mapped (SS), are frequently borderline in the criteria established and are probably less sensitive than those in the northern portion. Most of the Illinois soils are sufficiently high in CEC to be ranked nonsensitive (Figure 5).

NORTHEASTERN STATES

This area, including New York, Pennsylvania, New Jersey, and the New England states, includes large regions of slightly sensitive and sensitive areas with nonsensitive areas interspersed. In Pennsylvania (Figure 6), the sensitive areas are related to the Alleghany uplands and the ridges in the ridge and valley area to the east. In New York (Figure 7), the sensitive areas are concentrated in the Adirondack Region where most of the soils are derived from coarse, non-basic, glacial till or sandy outwash deposits. Significant areas are also found east of the Hudson and on Long Island. In New Jersey (Figure 8), the sensitive areas are in the well drained sandy areas. The New England states (Figures 9-14) contain a large area of slightly sensitive soils, however, the map detail and cation exchange data available for that area was variable. Our maps for Vermont and New Hampshire are not very reliable. They probably do not adequately show the differences in sensitivity within, nor do they mesh well with adjoining states. Most of the State of Maine (Figure 11) is slightly sensitive, and that complex pattern of varying sensitivity should carry westward into New Hampshire and Vermont (Figures 9 and 10).

CENTRAL STATES

In Kentucky, West Virginia, and Tennessee (Figures 15-17), most of the soils are highly weathered from a variety of residual parent materials. The long weathering periods in relatively warm wet climates have produced highly leached soils, most of which have a moderate or low CEC. Therefore, by the criteria used here, large portions of these states are mapped in the slightly sensitive category with varying degrees of inclusions (SS1 or SS2). The Cumberland Mountains and Plateau area of Tennessee and Kentucky where most of the soils are shallow and derived from sandstone is an extensive area where nearly all the soils are sensitive or slightly sensitive. In West Virginia, eastern Kentucky, and eastern Tennessee, the shallow soils of the steep slopes are usually lower in buffering capacity than the valley soils between the ridges. The result is a very complex pattern of mapping units lying parallel to the ridge and valley alignment. A surprising amount of western Tennessee (Figure 17) and Kentucky (Figure 15) appear in the slightly sensitive categories. Many of the soils in these areas (and of Mississippi, Figure 18) are formed in wind blown silts of considerable depth. The CEC fell slightly below our arbitrary dividing point in most cases, and, therefore, they were mapped "slightly sensitive." However, the effects will certainly be small and agricultural practices will conceal any effects that do occur since a high percentage of that land is cropped.

SOUTHEASTERN STATES

The states that form the east and south coasts from Louisiana around to Delaware and Maryland (Figures 18-27) have sandy coastal plains deposits in common. Where these deposits are well drained and have low organic matter content as they usually do in the "sand hills" and rolling lands, they are considered sensitive or slightly sensitive. The Piedmont region contained both slightly sensitive and nonsensitive regions, and most of the Appalachian region was in one of the sensitive categories. Where soil maps were in sufficient detail as they were in Georgia (Figure 21), most of the stream valleys are mapped NS. The Mississippi Delta (Figures 18, 19) and the belt of dark heavy textured soils across Alabama and eastern Mississippi (Figures 18 and 20) are nonsensitive regions.

EASTERN UNITED STATES

In Figure 28, a generalized map of the eastern United States is presented. It is apparent that using criteria we established, large portions of the country have soils that may be sensitive to long term effects of acid precipitation. These areas are concentrated in the southeastern United States on highly weathered soils, on the shallow and sloping soils of the Appalachian Highland regions, in the Adirondack Mountains, and coarse tills of the New England states. In much of this area, the southeastern United States in particular, a high percentage of these soils are in cultivation and any effects of acid precipitation will be overshadowed by effects of soil amendments, such as lime and fertilizers (Fig. 29).

This exercise produced maps that appear to be useful in research planning and obtaining an overview of soil resources related to the acid precipitation phenomena. Most of the state maps appear to be reasonable based on current soil and geologic knowledge. It is apparent that additional soil data should be obtained, the criteria refined, and the maps improved at these scales or more detailed levels. Obviously, field testing is needed before new criteria are defined. Until better information is available, if land use maps are overlaid on these maps and natural or unmanaged areas are located that also contain a high percentage of potentially "sensitive" soils, one can locate regions where research has a higher probability of detecting acid precipitation effects.

We should not ignore the possibility of serious effects accruing to soils from atmospheric deposition, but until we have a firm data base, we should heed the advice of B. T. Mason (1977) of the UK Meteorological Office. Where he was speaking of the atmosphere, we could substitute the word, "soils." "The atmosphere is a robust system with a built-in capacity to counteract any perturbation . . . . Sensational warning of imminent catastrophe, unsupported by firm figures, not only are irresponsible, but likely to prove counter-productive. The atmosphere is wont to make fools of those who do not show proper respect for its complexity and resilence."

Defining and locating soil areas most likely to be sensitive to acid precipitation is a logical step toward gathering "firm facts and figures."

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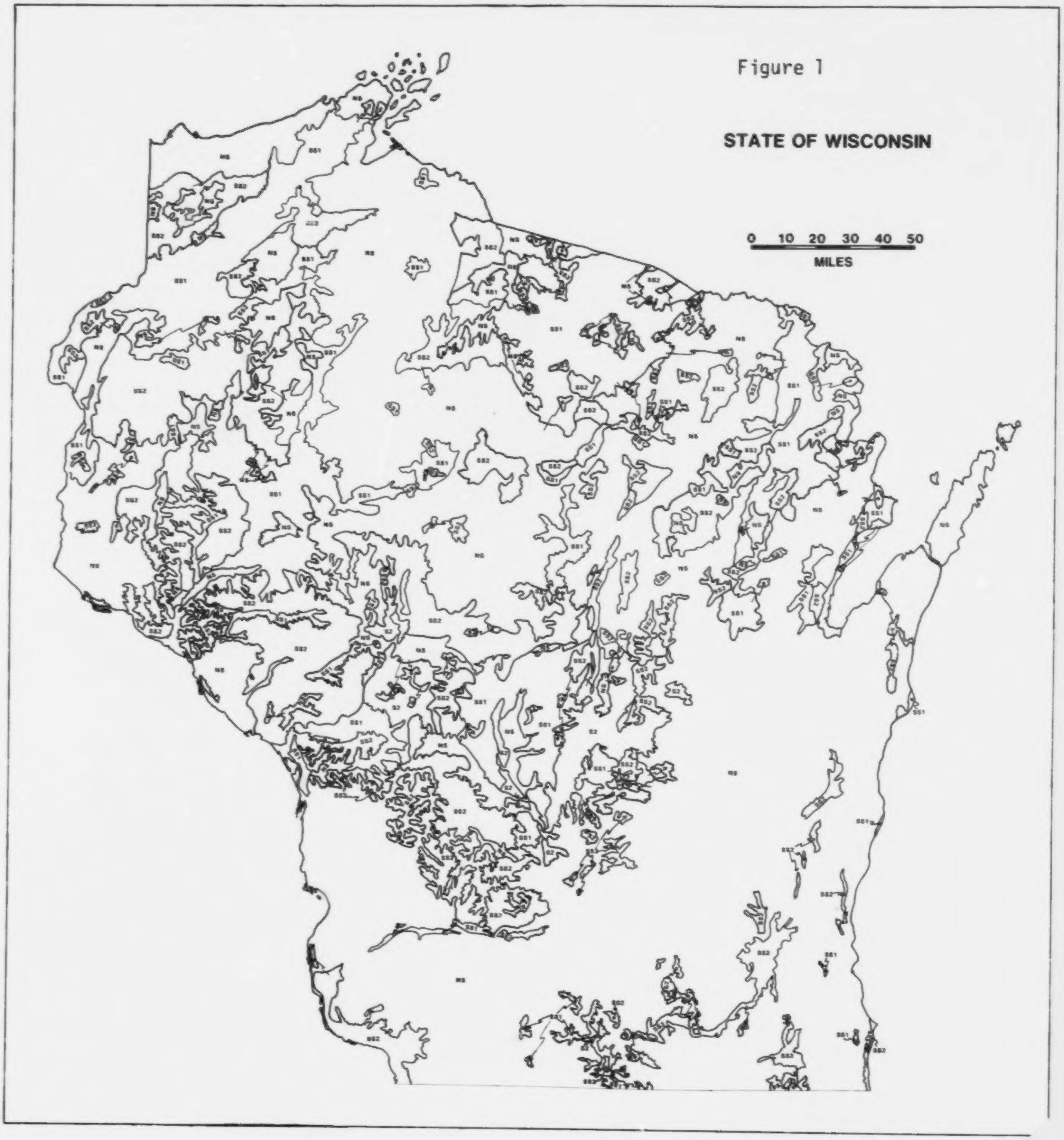
Figures 1 - 27

Soil sensitivity in the 27 states east of the Mississippi River.

KEY

NS - mostly non-sensitive
S1 - sensitive
SS1 - slightly sensitive
S2 - sensitive <50 percent
SS2 - slightly sensitive <50 percent

Figure 1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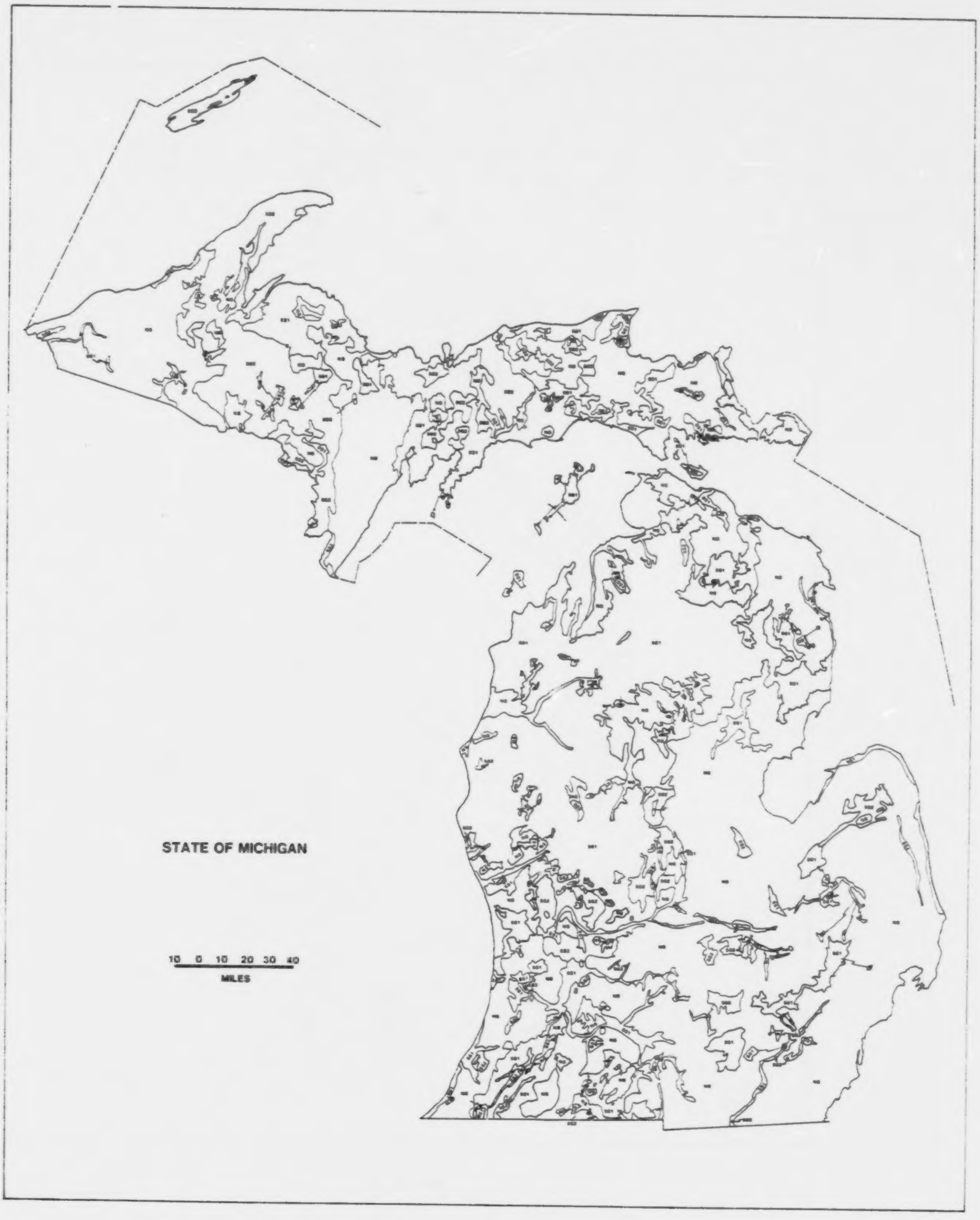
STATE OF MICHIGAN
10 0 10 20 30 40
MILES

Figure 2

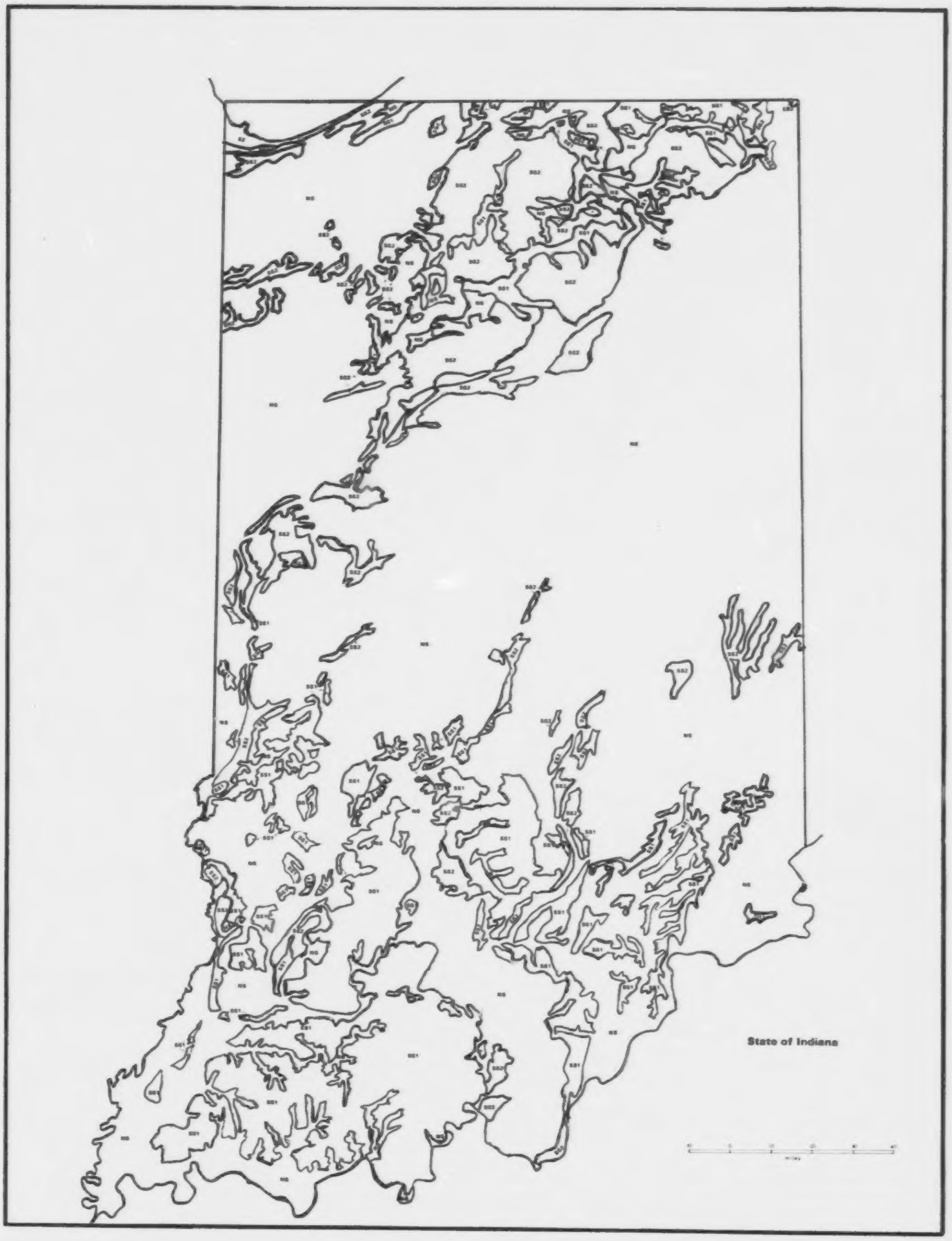
State of Indiana

Figure 3

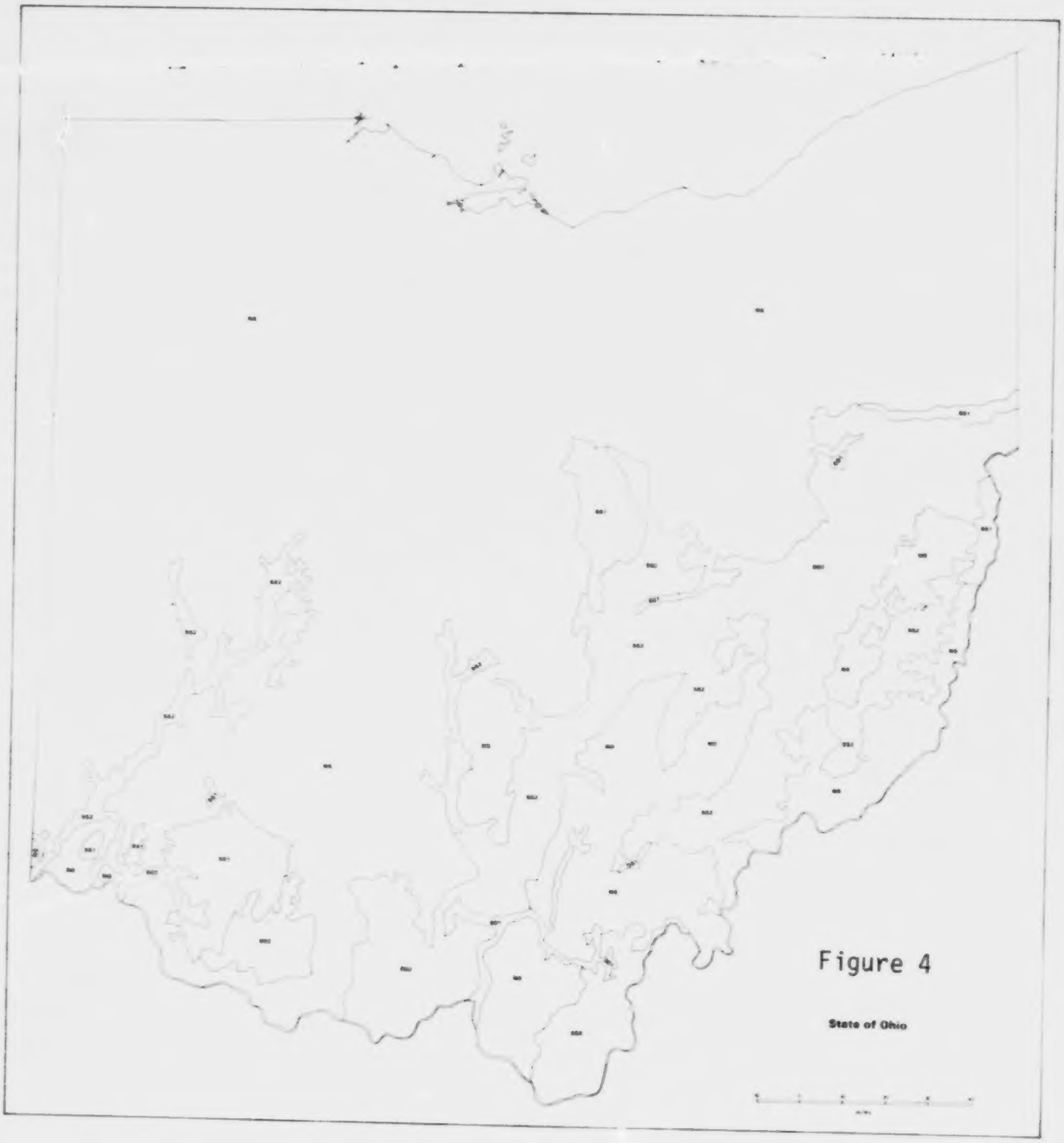

Figure 4

State of Ohio

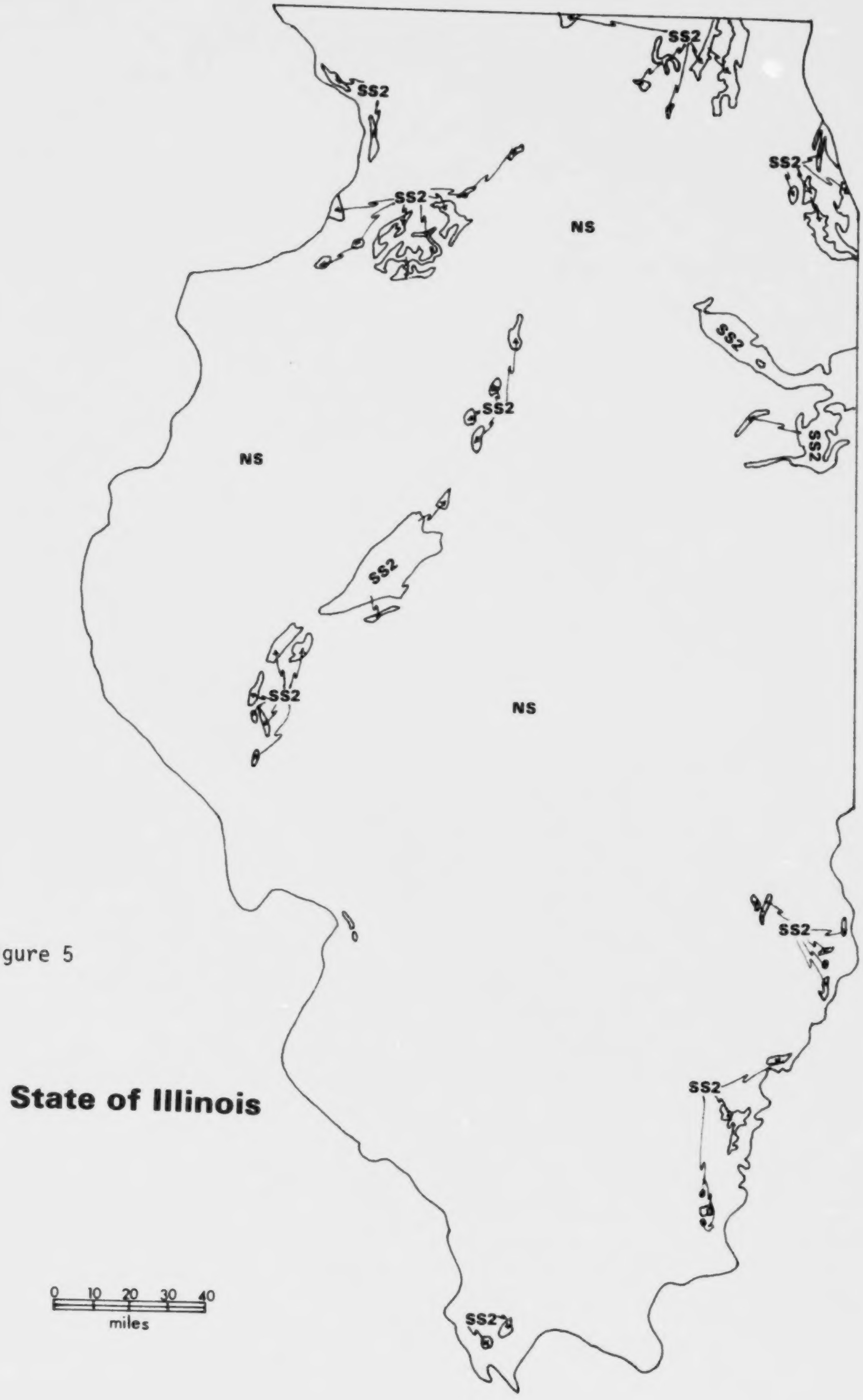
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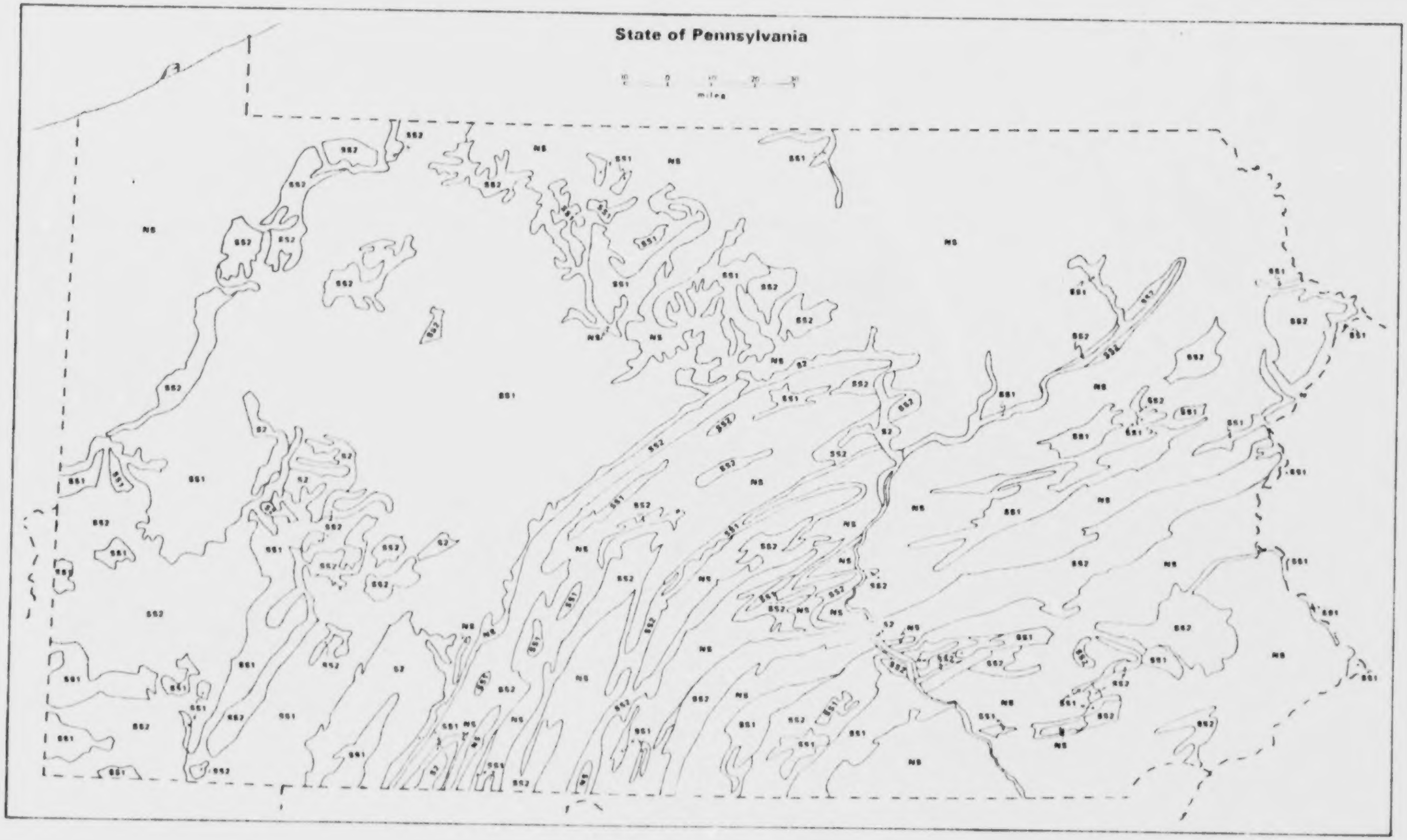
Figure 5

State of Illinois


State of Pennsylvania
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SS1
SS2
S2

Figure 6

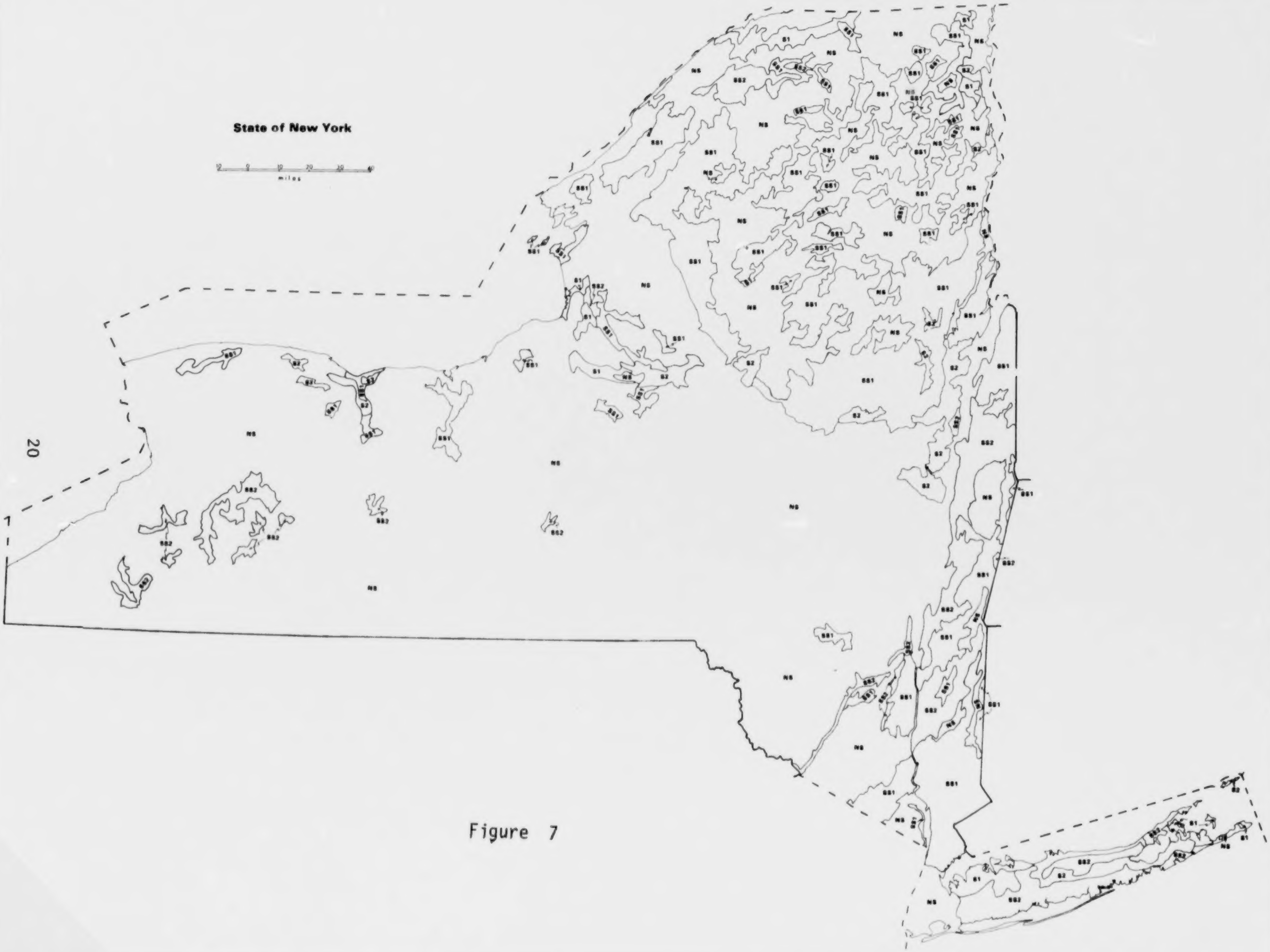

State of New York
10 0 10 20 30 40
miles
NS
SS1
SS2
S1
S2

Figure 7

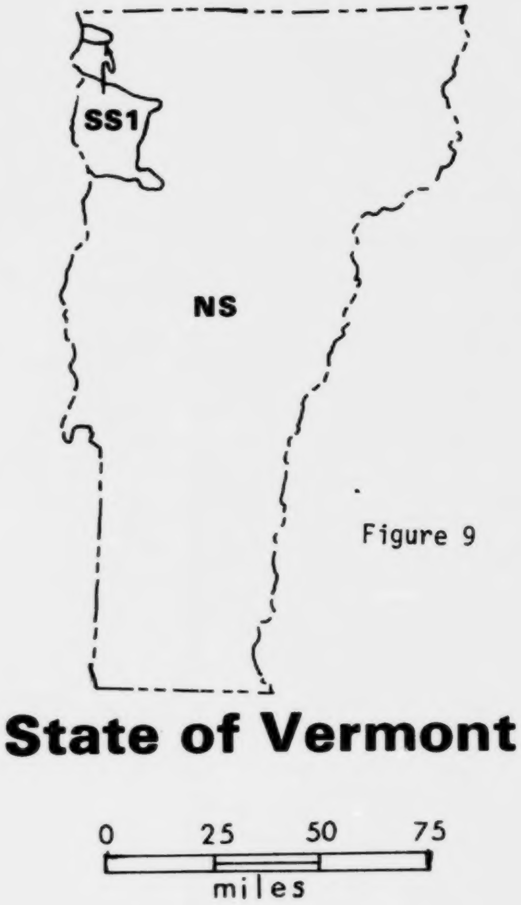

SS1
NS
State of Vermont
0
25
50
75
miles

Figure 9

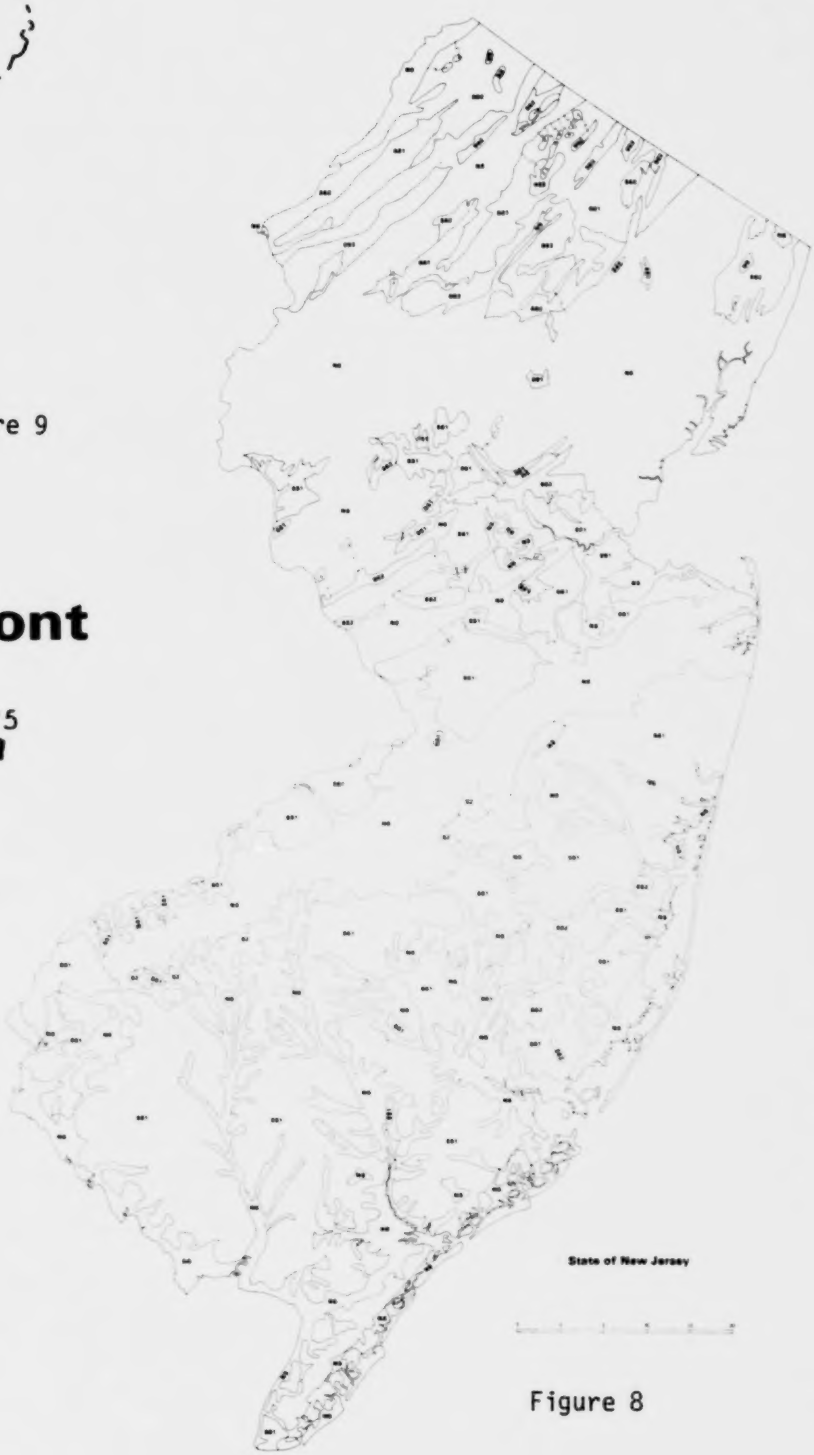
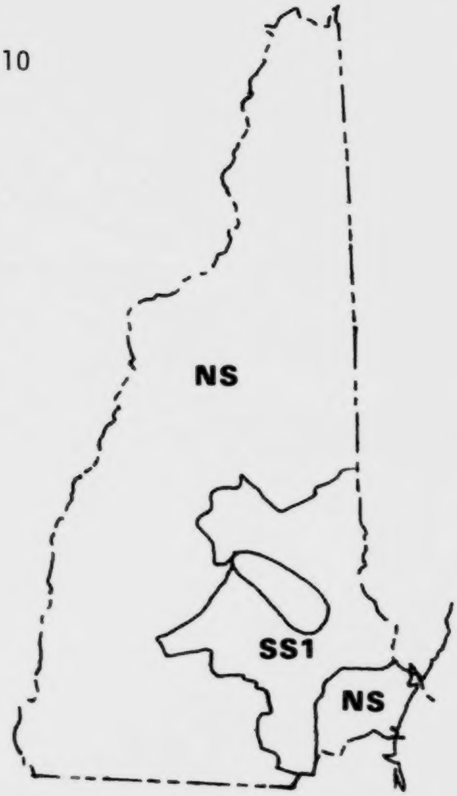

State of New Jersey

Figure 8

Figure 10



State of New Hampshire

0 25 50 75
miles

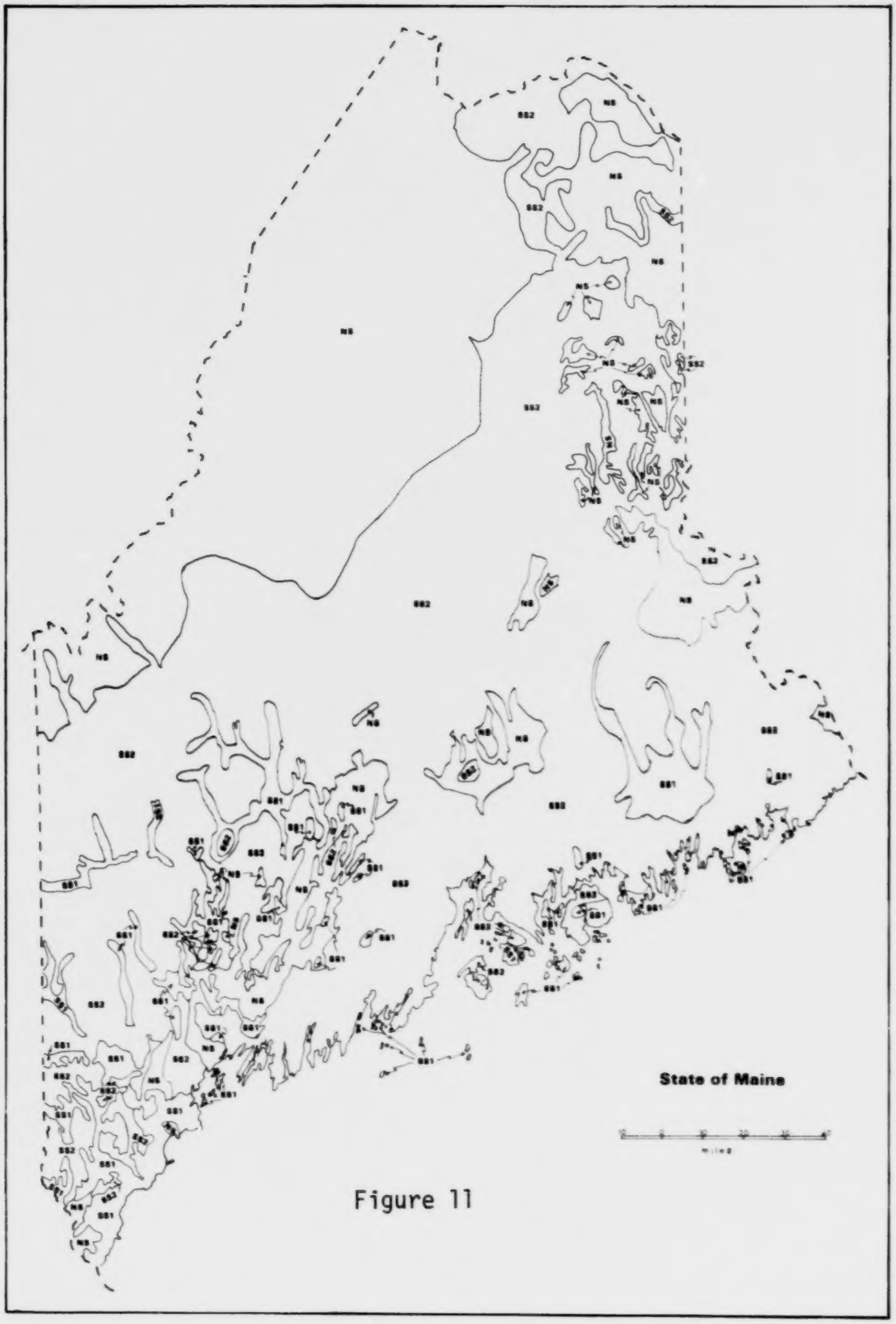

State of Maine
miles
NS
SS1
SS2

Figure 11

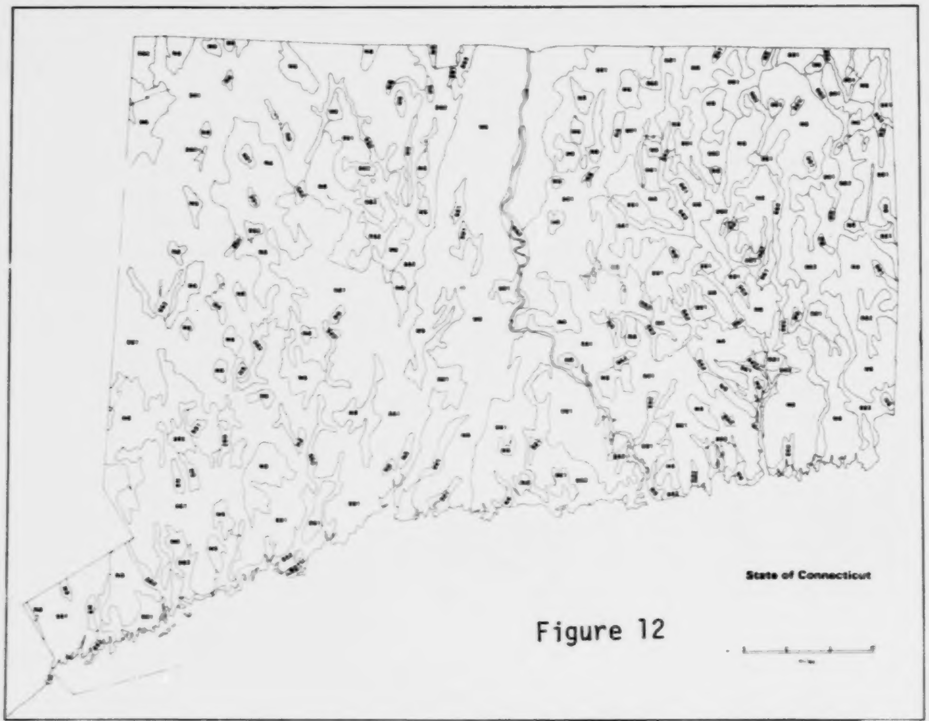

State of Connecticut

Figure 12

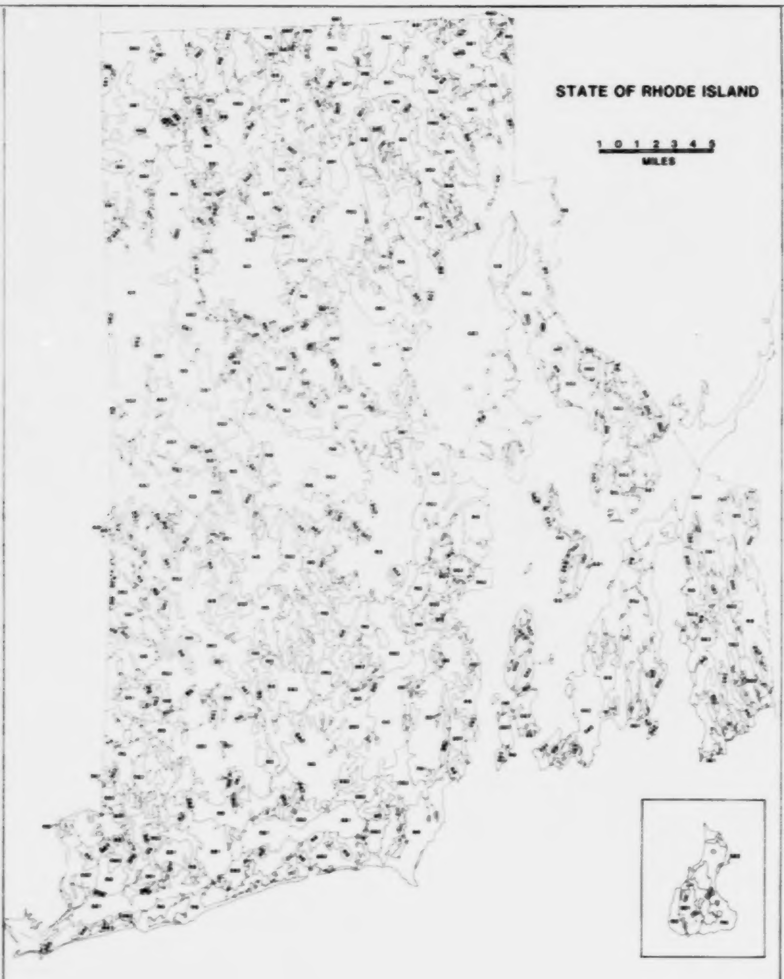

STATE OF RHODE ISLAND
1 0 1 2 3 4 5
MILES

Figure 13

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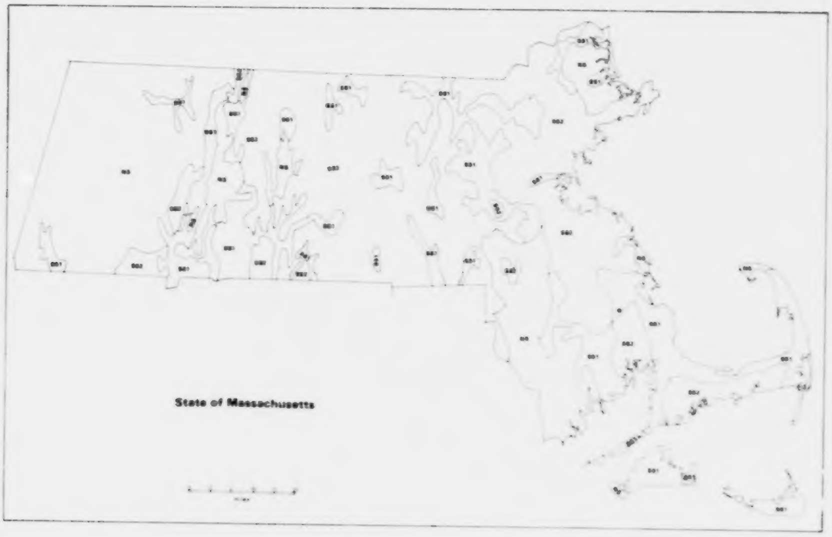

State of Massachusetts

Figure 14

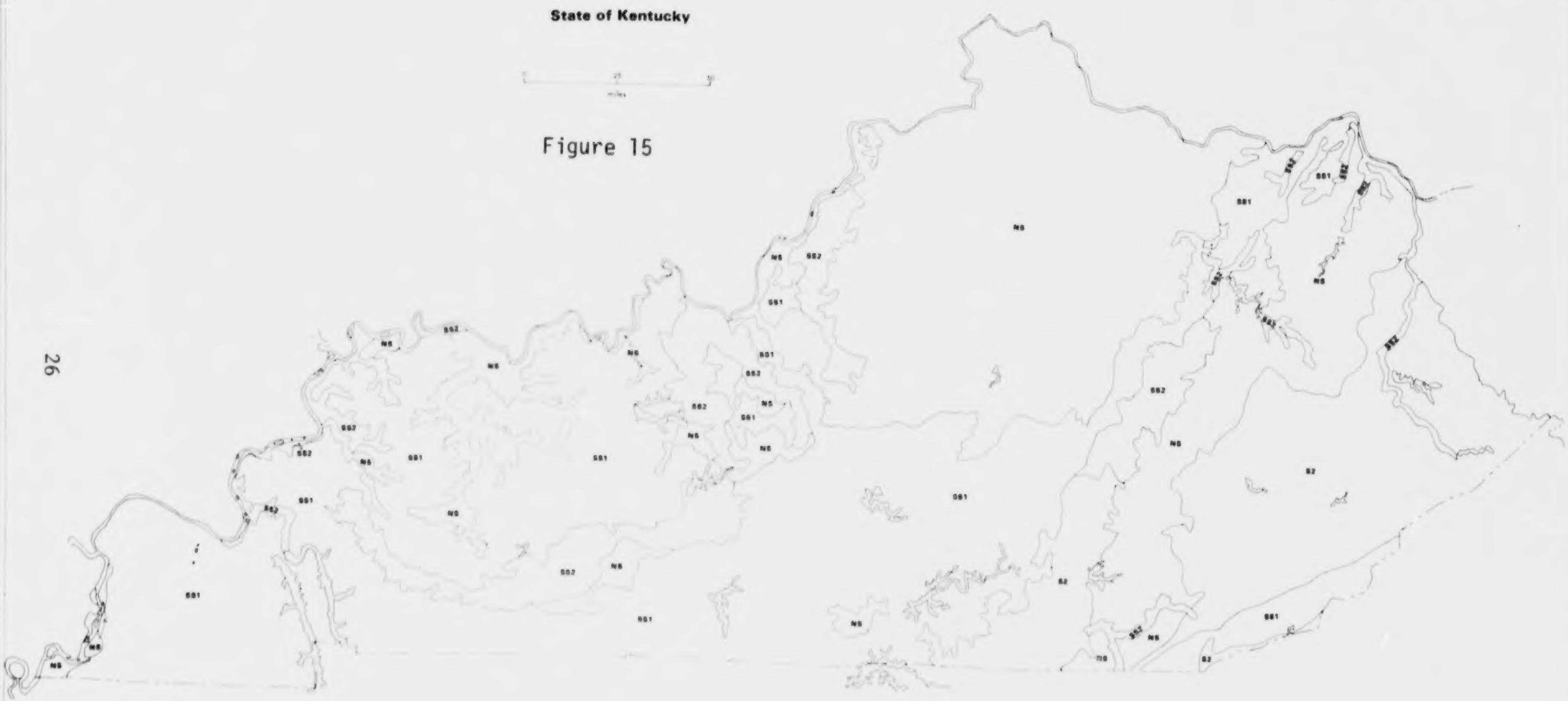

State of Kentucky
0
25
50
miles
NS
SS1
SS2
S2
TD

Figure 15

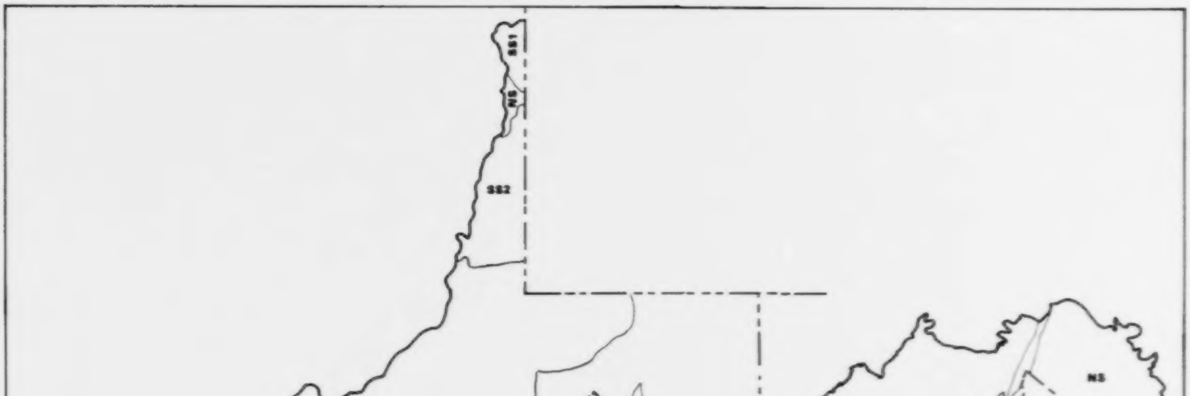

SS1
NS
SS2
SS1
NS
NS
S1
NS
NS
SS1
S1
NS
SS2
SS2
NS
NS
NS
NS
SS1
SS1
NS
NS
NS
SS1
SS1
State of West Virginia
10 0 10 20 30
miles

Figure 16

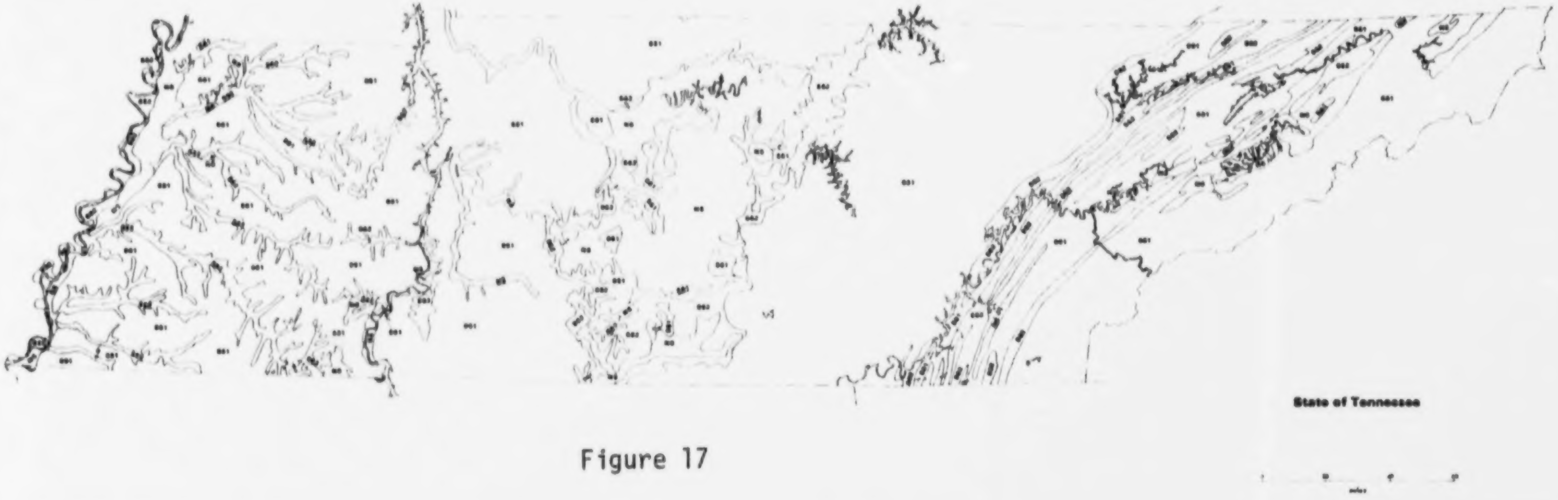
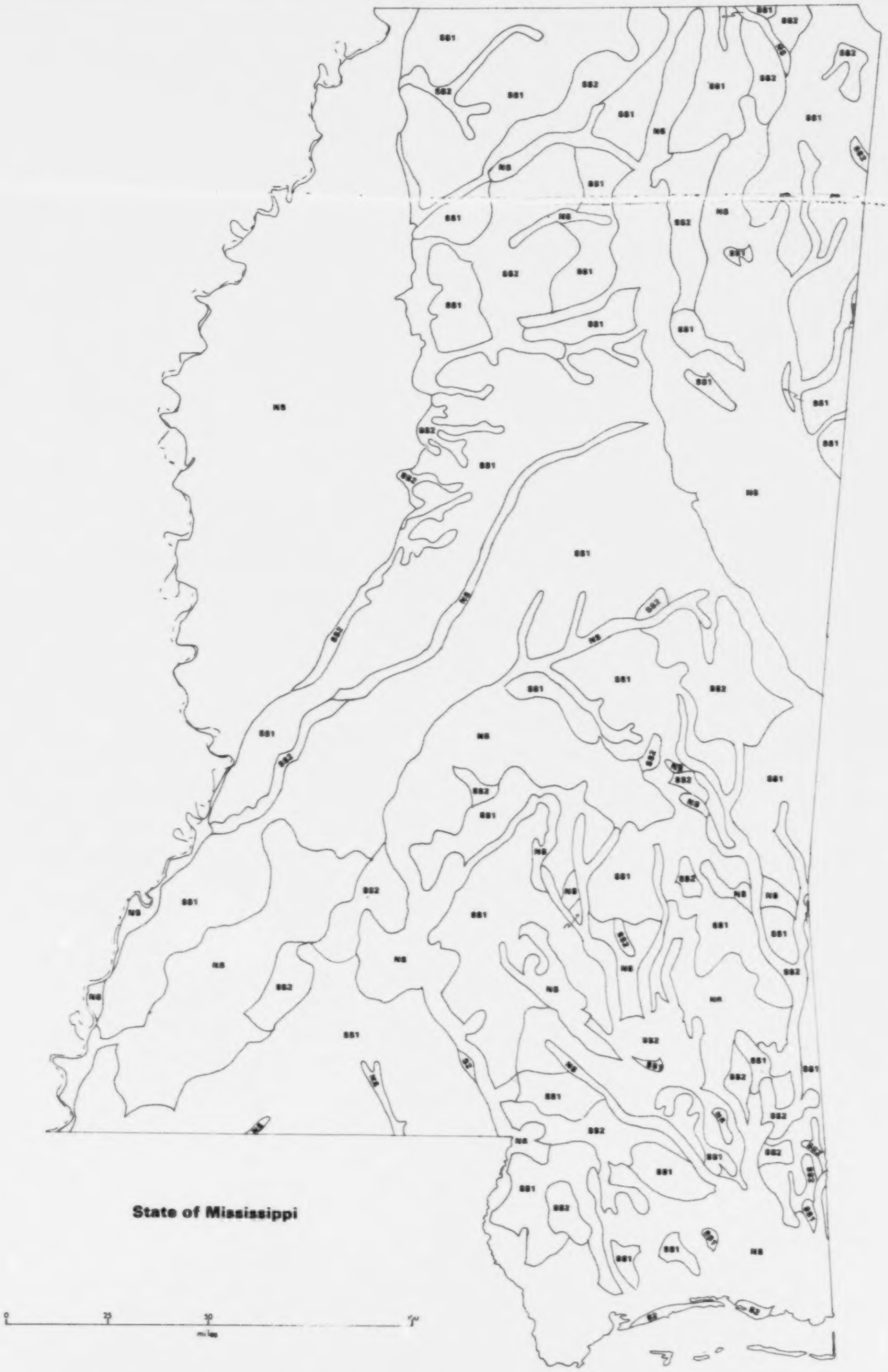

State of Tennessee

Figure 17


SB1
SB2
NS
0
25
50
miles

State of Mississippi

Figure 18

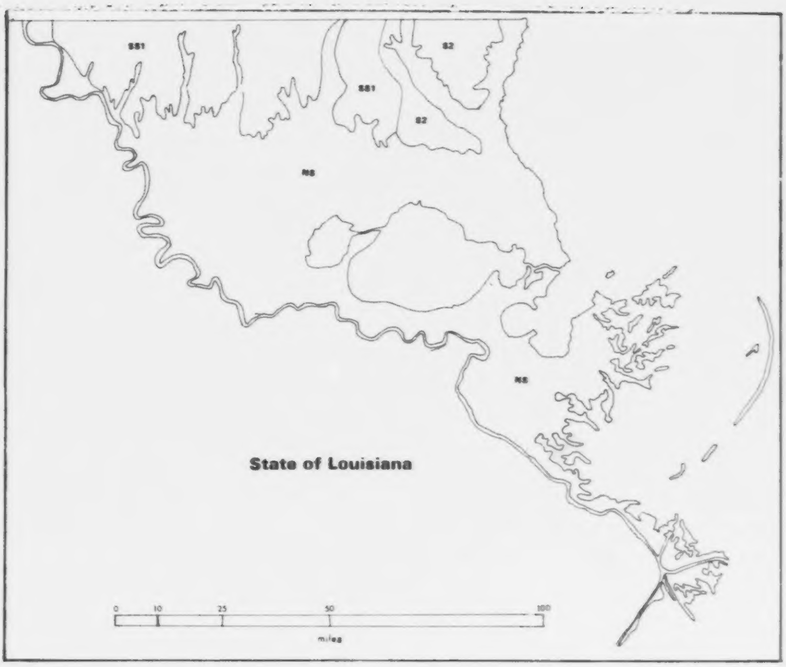

SS1
S2
SS1
S2
NS
NS
State of Louisiana
0
10
25
50
100
miles

Figure 19

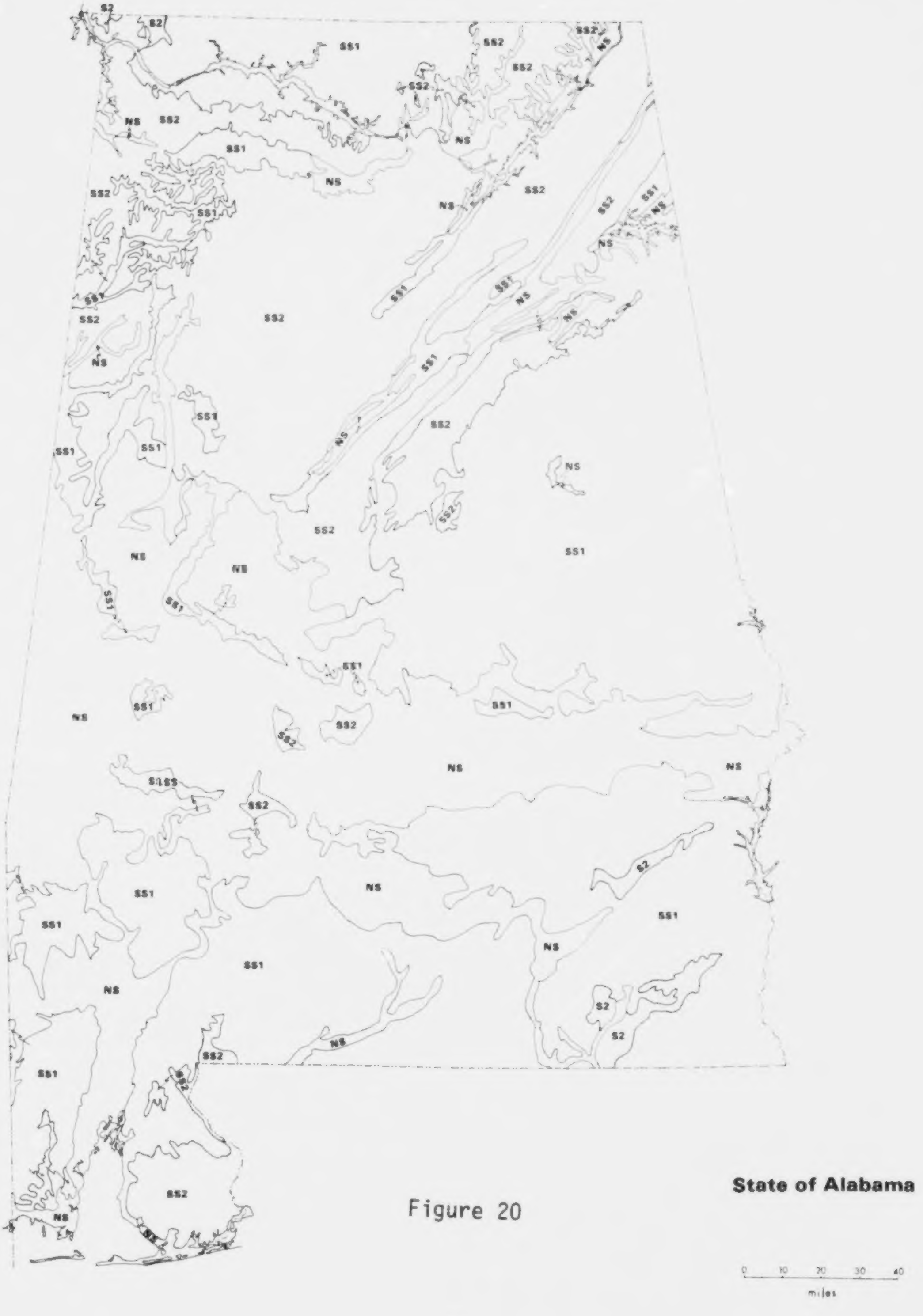

State of Alabama
S2
SS1
SS2
NS
0 10 20 30 40
miles

Figure 20

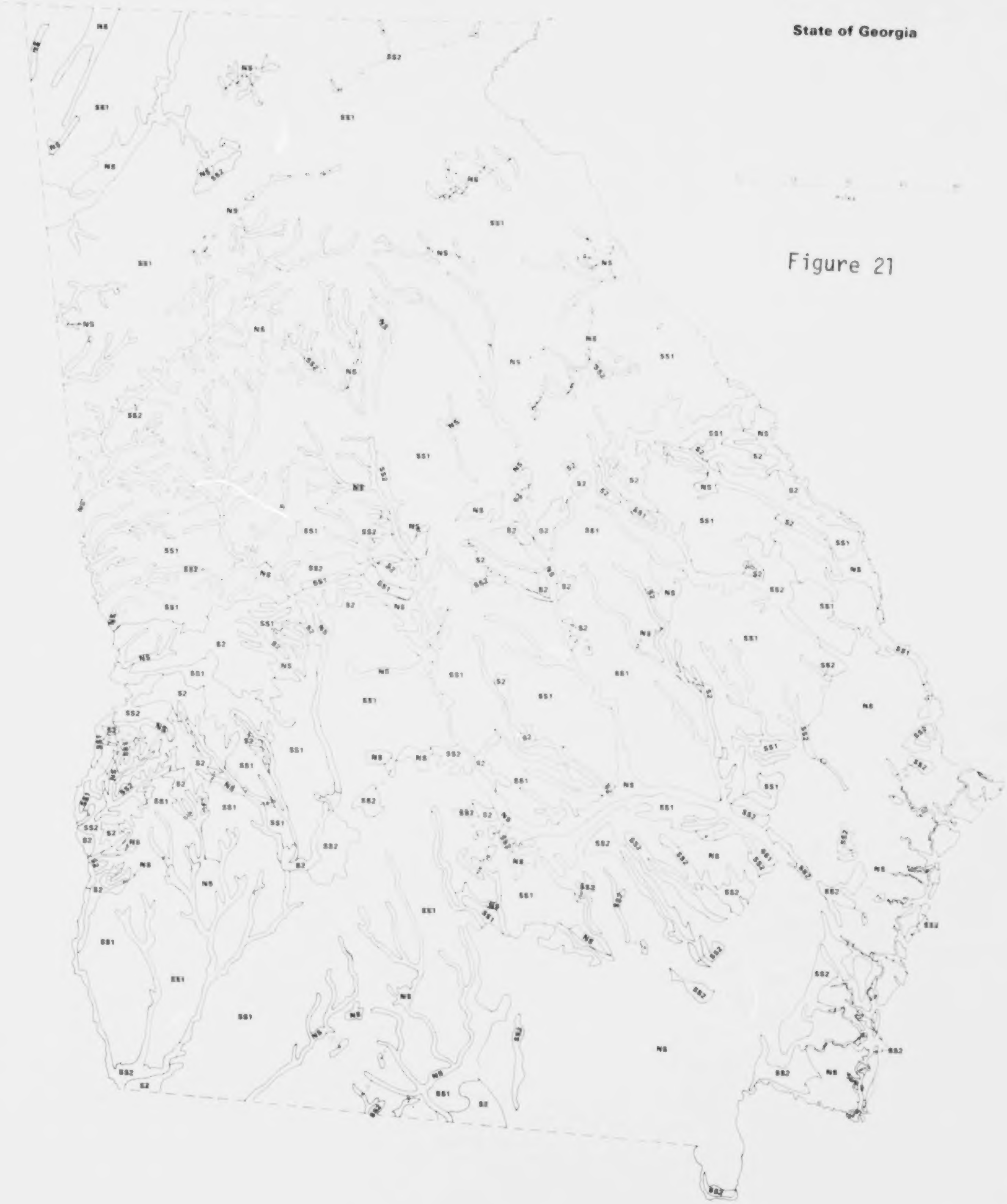

State of Georgia
NS
SS1
SS2
S2

Figure 21

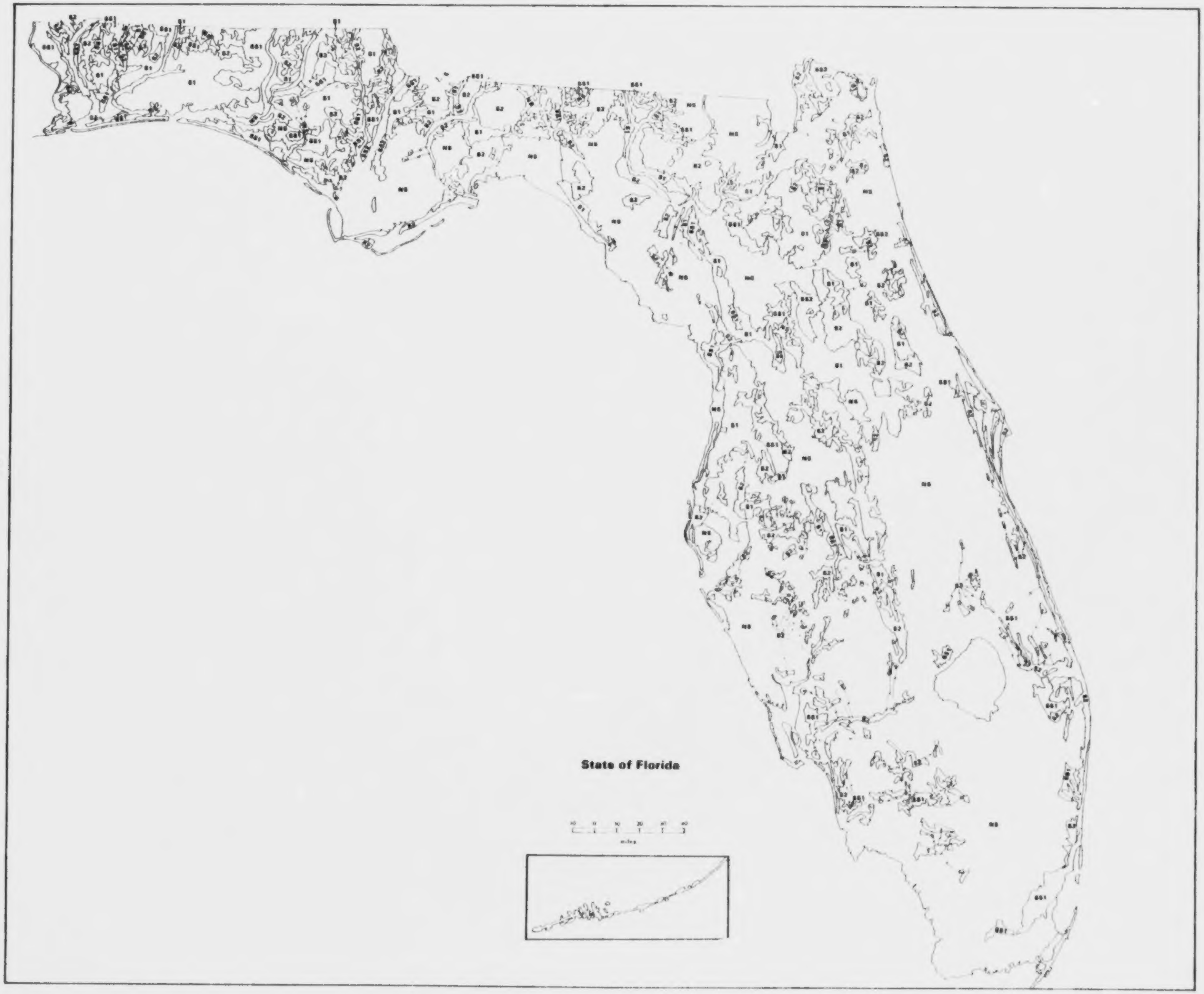

State of Florida
10 0 10 20 30 40
miles

Figure 22

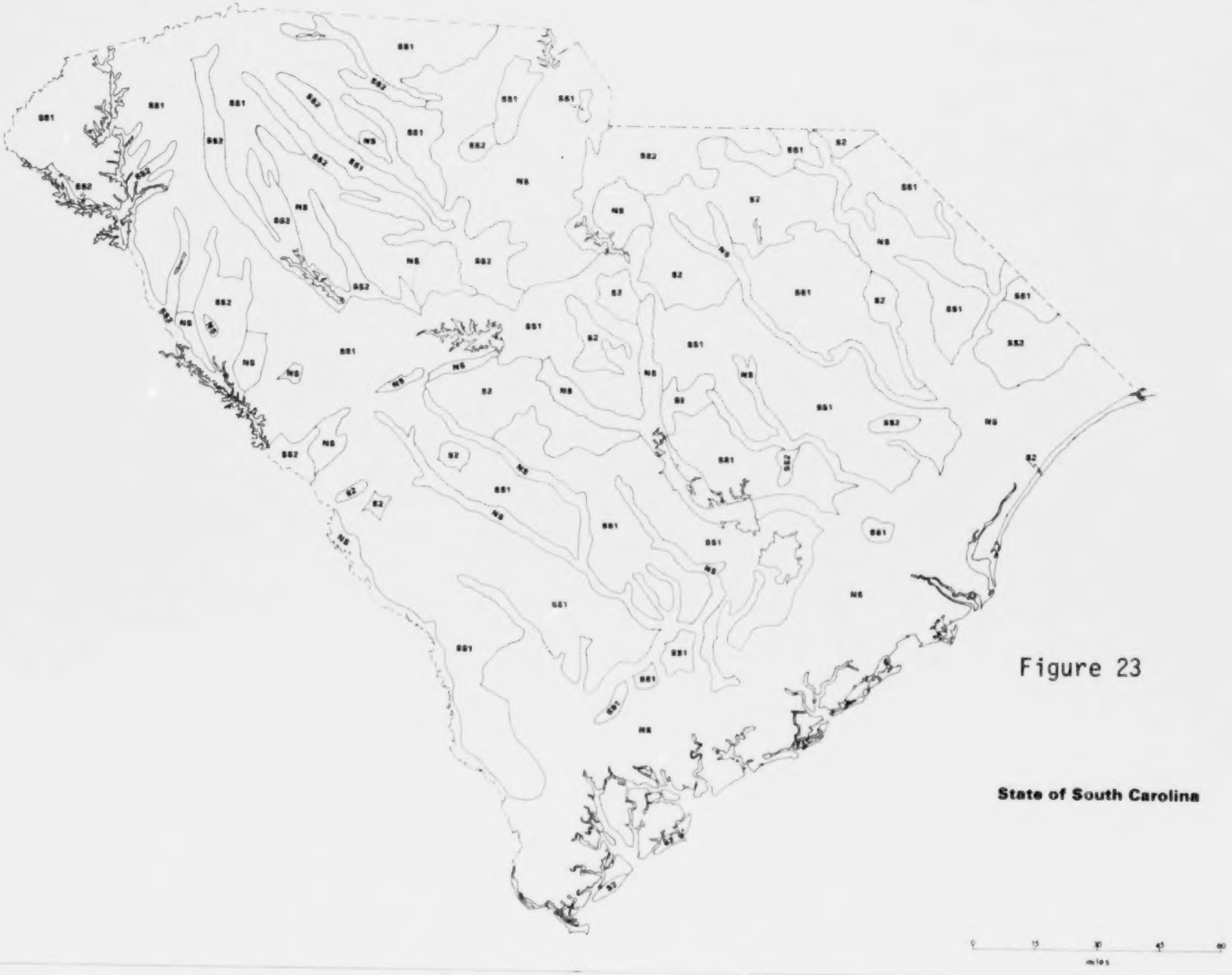

SS1
SS2
SS1
SS1
SS1
SS1
SS1
SS2
SS2
SS2
NS
SS2
S2
SS2
SS1
NS
SS1
SS2
NS
NS
S2
SS1
SS2
NS
SS2
SS2
SS2
NS
S2
SS1
S2
SS1
SS1
SS2
SS1
NS
S2
SS1
NS
NS
NS
S2
S2
NS
SS1
SS2
NS
SS2
NS
S2
SS1
SS2
S2
NS
S2
NS
SS1
SS1
SS1
NS
SS1
SS1
SS1
NS
SS1
SS1
NS
S2
0
15
30
45
60
miles

Figure 23

State of South Carolina

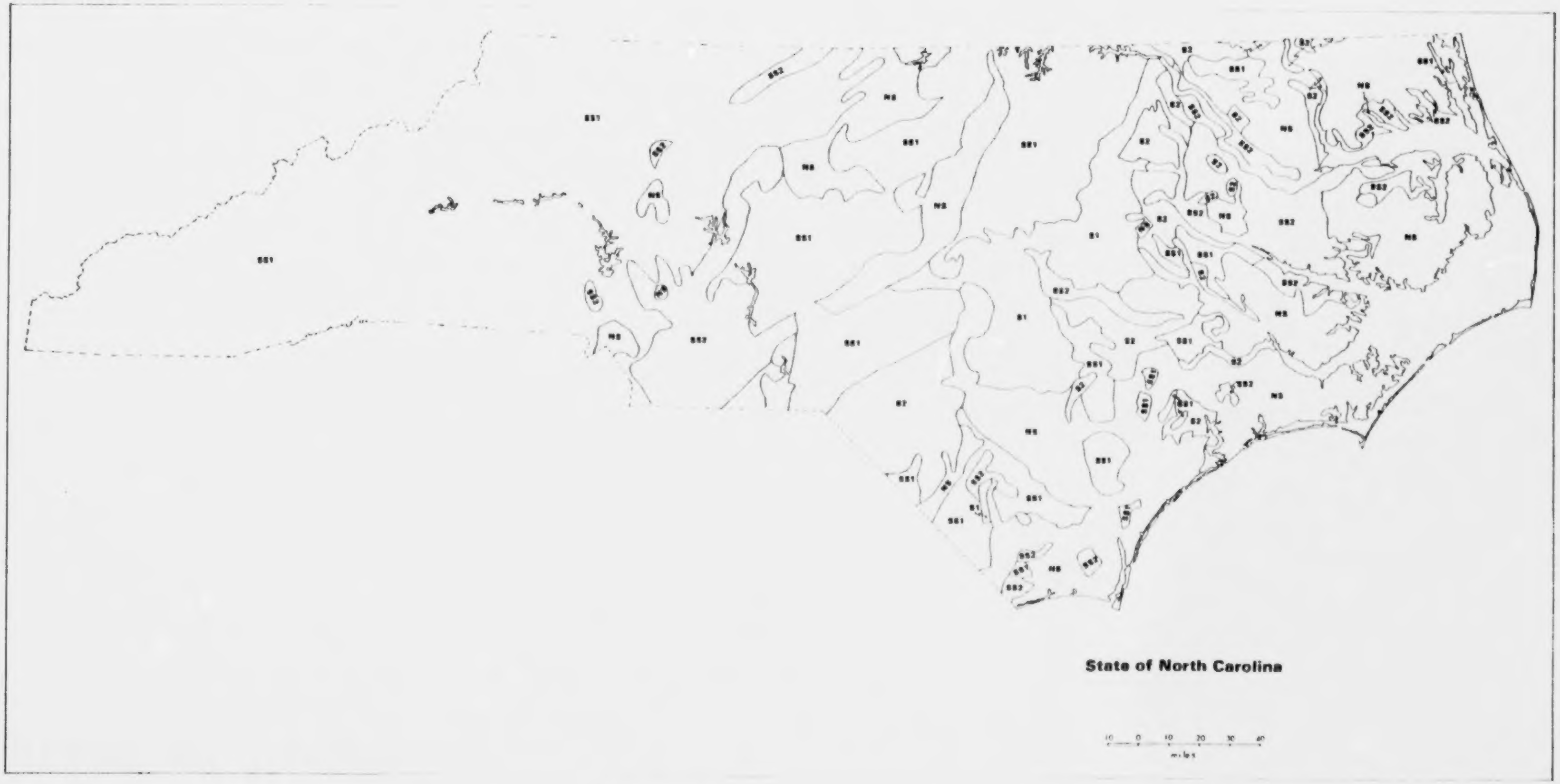

State of North Carolina
10 0 10 20 30 40
miles

Figure 24

State of Virginia

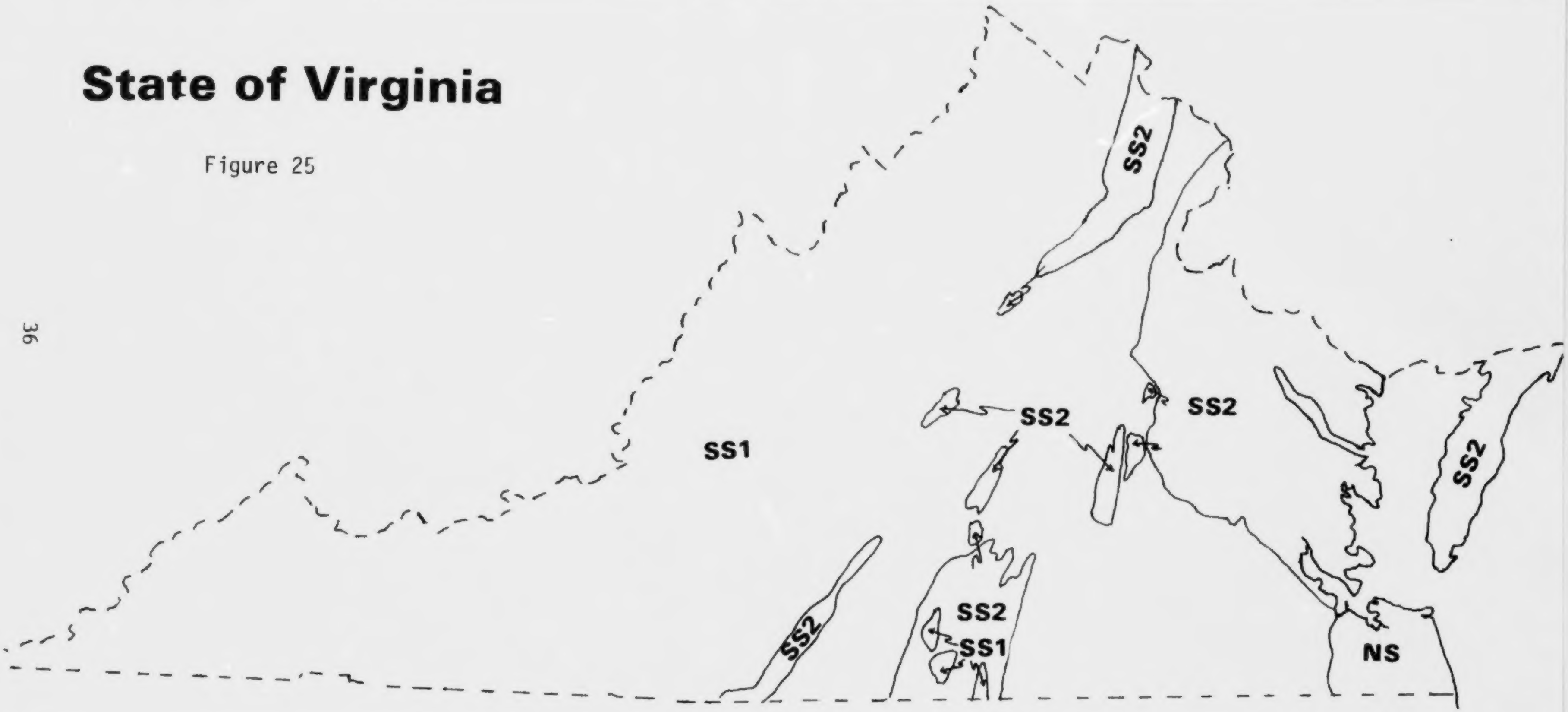

SS2
SS2
SS2
SS2
SS1
SS2
SS2
SS1
NS

Figure 25

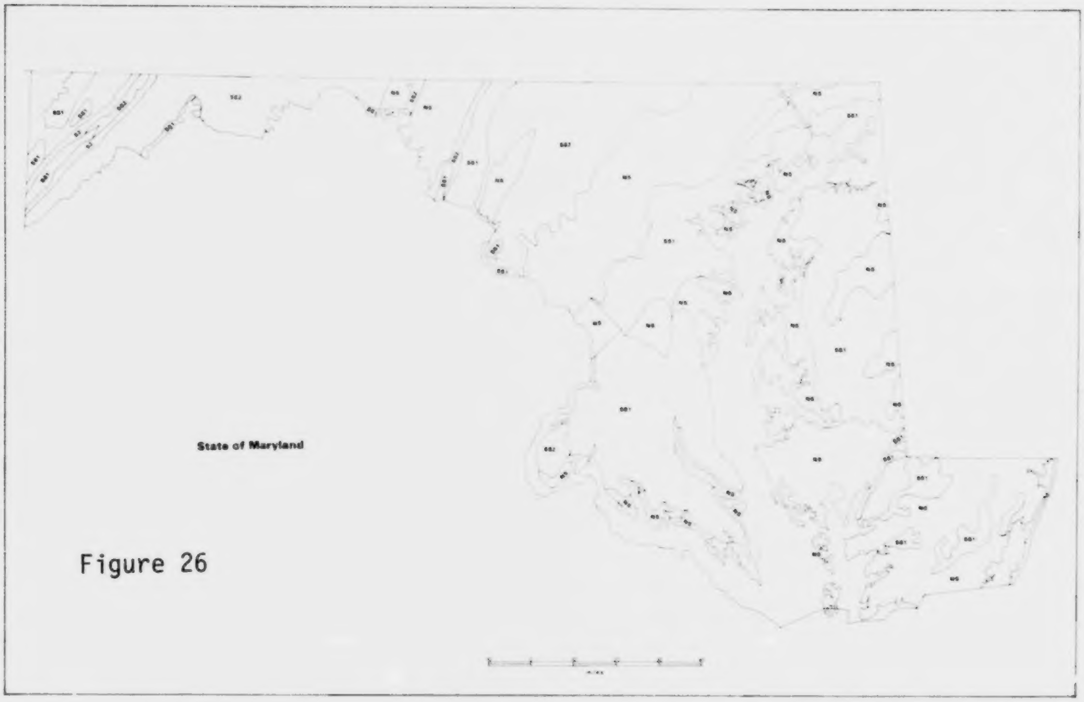

State of Maryland

Figure 26

Reproduced from
best available copy.

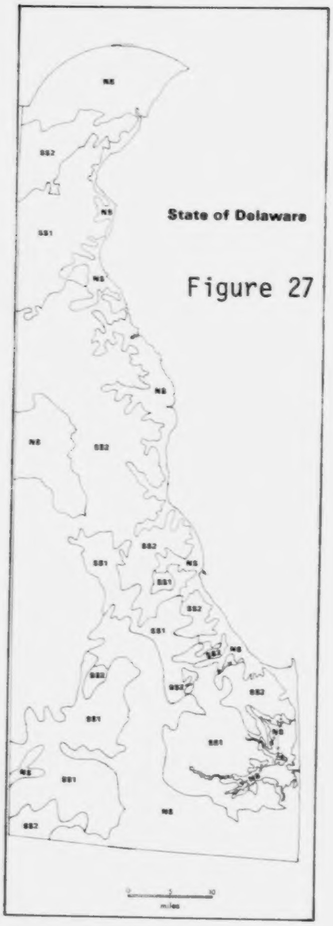


Figure 27

State of Delaware

NS
SS2
NS
SS1
NS
NS
NS
SS2
SS2
SS1
NS
SS1
SS2
SS1
SS3
NS
SS2
SS2
SS2
SS1
NS
SS1
NS
NS
SS1
NS
SS2
0
5
10
miles

Figure 28

Soil sensitivity in the eastern United States.

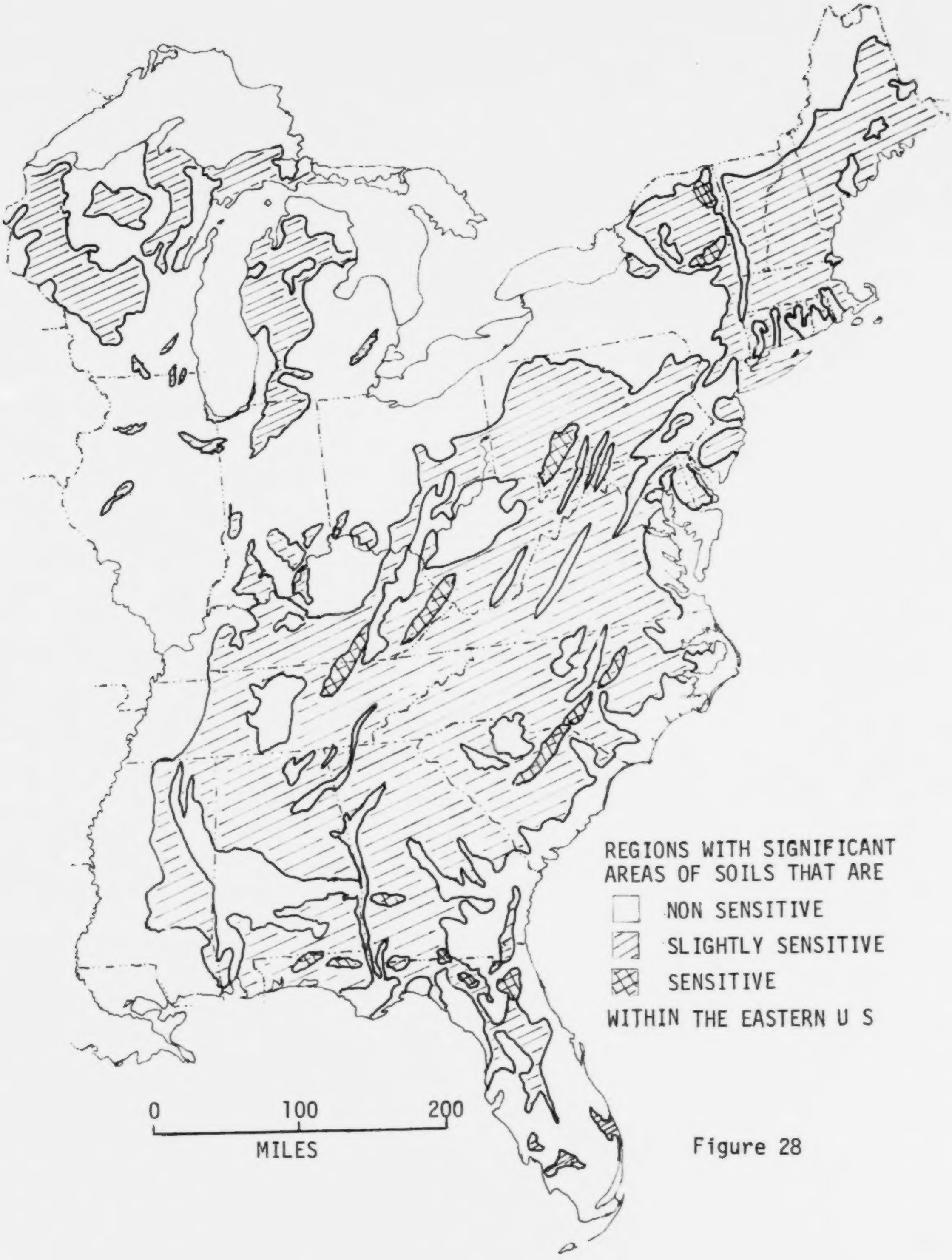

REGIONS WITH SIGNIFICANT AREAS OF SOILS THAT ARE
NON SENSITIVE
SLIGHTLY SENSITIVE
SENSITIVE
WITHIN THE EASTERN U S
0
100
200
MILES

Figure 28

Figure 29

Major land uses in the eastern United States.

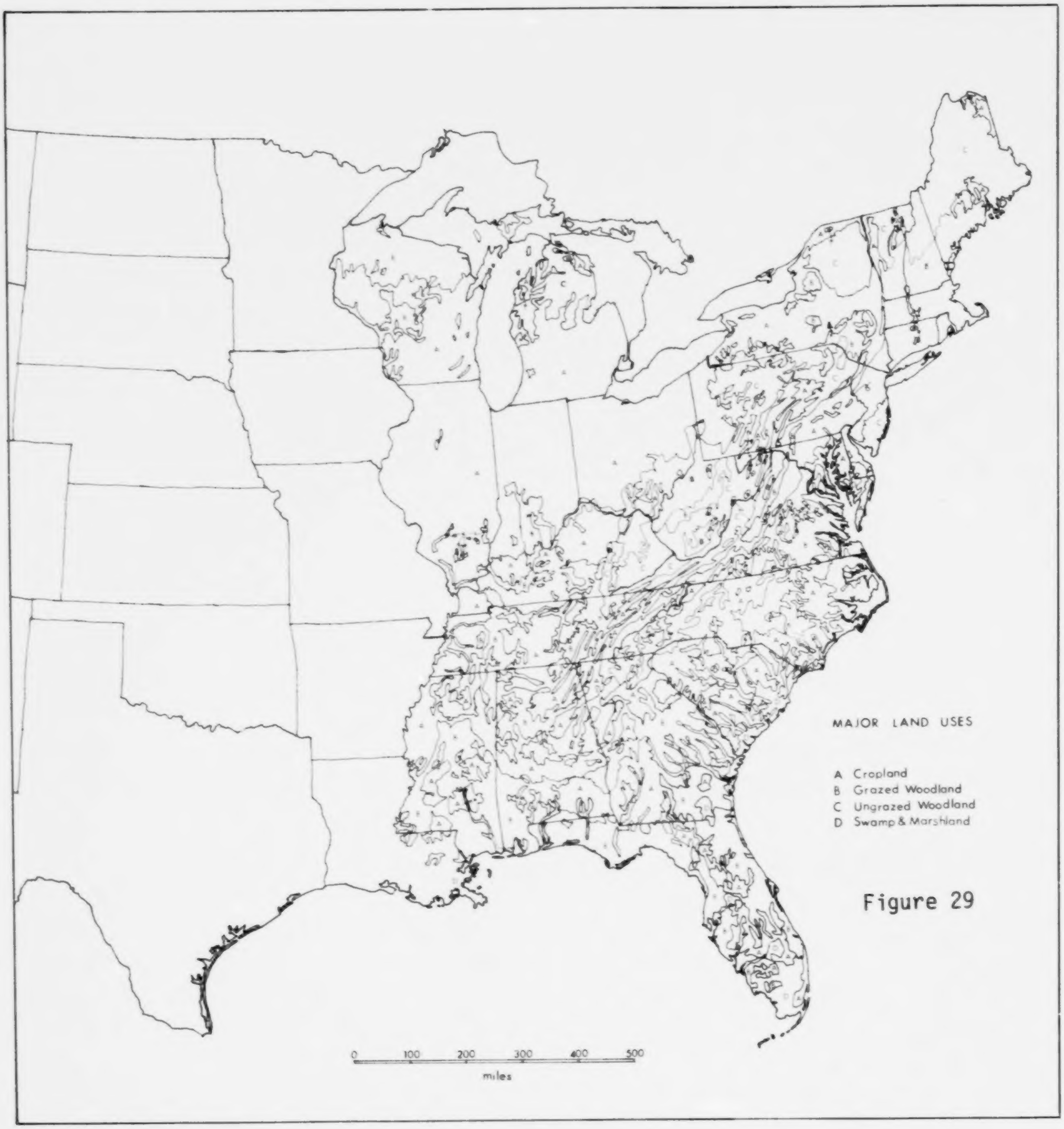

MAJOR LAND USES
A Cropland
B Grazed Woodland
C Ungrazed Woodland
D Swamp & Marshland
0
100
200
300
400
500
miles

Figure 29

APPENDIX A

The mapping units shown on the source maps and the sensitivity or susceptibility ratings assigned to each.

ALABAMA

Land Resource	Soil Association	CEC	Suscept. Level	Assoc. Suscept. Rating
1. Soils of the limestone valleys and uplands. (Paleudults, Fragiudults)	1. Barfield- Rockland, limestone	* *	NS NS	NS
	2. Cheaha- Leesburg	* *	SS SS	SS1
	3. Colbert- Conasauga- Firestone	* * *	NS NS NS	NS
	4. Conasauga- Firestone- Talbott	* * *	NS NS NS	NS
	5. Decatur- Dewey	* *	SS SS	SS1
	6. Decatur- Dewey- Allen	* * *	SS SS SS	SS1
	7. Dickson Fullerton	* *	SS SS	SS1
	8. Holston- McQueen- Chewacla	* * *	SS NS NS	NS
	9. Lobelville- Lee	* *	NS NS	NS
	10. Minvale- Bodine- Fullerton	* * *	SS SS SS	SS1
	11. Minvale- Fullerton	* *	SS SS	SS1
2. Soils of the Appalachian plateau. (Hapludults, Dystrochrepts)	12. Hartsells- Linker- Albertville	* * *	SS SS NS	SS2
	13. Hartsells- Rockland, limestone- Hector	* * *	SS NS SS	SS2

ALABAMA

	14. Hartsells-	*	SS	SS2
	Wynnville-	*	SS	
	Albertville	*	NS	
	15. Hector-	*	SS	SS2
	Rockland, limestone-	*	NS	
	Allen	*	SS	
	16. Montevallo-	*	SS	SS2
	Townley-	*	SS	
	Enders	*	NS	
3. Soils of the piedmont plateau. (Hapludults, Rhodudults)	17. Appling-	*	SS	SS1
	Cecil	7.6	SS	
	18. Cecil-	7.6	SS	SS1
	Grover-	*	SS	
	Madison	*	SS	
	19. Davidson-	*	SS	SS1
	Hiwassee-	*	SS	
	Gwinnett	*	SS	
	20. Iredell-	*	NS	NS
	Mecklenburg	*	SS	
	21. Gwinnett-	*	SS	SS1
	Cecil-	7.6	SS	
	Appling	*	SS	
	22. Madison-	*	SS	SS1
	Louisa-	*	SS	
	23. Madison-	*	SS	SS1
	Tallapoosa	*	SS	
	24. Musella-	*	SS	SS1
	Gwinnett-	*	SS	
	Hiwassee	*	SS	
	25. Tallapoosa-	*	SS	SS1
	Tatum	*	SS	
4. Soils of the Prairies. (Eutrochrepts, Hapludalfs, Paleudalfs)	26. Demopolis-	*	NS	NS
	Sumter-	*	NS	
	Oktibbeha	*	NS	
	27. Sumter-	*	NS	NS
	Oktibbeha-	*	NS	
	Leeper	*	NS	

	28. Wilcox-	27.6	NS	NS
	Mayhew-	*	NS	
	Eutaw	41.1	NS	
	29. Boswell-	*	NS	NS
	Susquehanna	*	NS	
5. Soils of the Coastal Plains. (Paleudults, Hapludults)	30. Dothan-	*	SS	SS1
	Fuquay-	*	SS	
	Wagram	*	SS	
	31. Dothan-	*	SS	SS1
	Orangeburg-	*	SS	
	Esto	*	SS	
	32. Flomaton-	*	SS	SS2
	Smithdale-	*	SS	
	Rockland, limestone	*	NS	
	33. Luverne-	*	NS	NS
	Smithdale-	*	SS	
	Boswell	*	NS	
	34. Malbis-	*	SS	SS2
	Orangeburg-	*	SS	
	Pansey	*	NS	
	35. McLaurin-	*	SS	SS1
	Troup-	*	SS	
	Ruston	5.7	S	
	36. Orangeburg-	*	SS	SS1
	Dothan-	*	SS	
	Luverne-	*	NS	
	Red Bay	5.6	S	
	37. Orangeburg-	*	SS	SS1
	Red Bay-	5.6	S	
	Dothan-	*	SS	
	Troup	*	SS	
	38. Poarch-	*	SS	SS2
	Benndale-	*	SS	
	Escambia	*	NS	
	39. Lucedale-	*	SS	SS1
	Bama	*	SS	
	40. Ruston-	5.7	S	S2
	Dickson	*	SS	
	41. Savannah-	8.0	SS	SS1
	Ruston-	5.7	S	
	Stough	8.1	SS	

	42. Smithdale	*	SS	SS2
	Luverne-	*	NS	
	Flomaton	*	SS	
	43. Smithdale-	*	SS	SS2
	Luverne-	*	NS	
	Troup	*	SS	
	44. Smithdale-	*	SS	SS1
	Troup-	*	SS	
	Lucedale-	*	SS	
	Luverne	*	NS	
	45. Smithton-	*	NS	NS
	Escambia-	*	NS	
	Troup	*	SS	
	46. Troup-	*	SS	SS1
	Alga-	*	SS	
	Lucy	3.4	S	
	47. Troup-	*	SS	SS1
	Luverne-	*	NS	
	Dothan-	*	SS	
	Orangeburg	*	SS	
	48. Troup-	*	SS	SS2
	Plummer-	*	SS	
	Escambia	*	NS	
	49. Troup-	*	SS	SS1
	Smithdale-	*	SS	
	Esto	*	SS	
	50. Troup-	*	SS	SS1
	Smithdale-	*	SS	
	Malbis-	*	SS	
	Escambia	*	NS	
	51. Luverne-	*	NS	NS
	Boswell-	*	NS	
	Quitman-	*	NS	
	Smithdale	*	SS	
	52. Red Bay-	5.6	SS	S2
	Orangeburg	*	SS	
6. Soils of the major floodplains and terraces. (Dystrochrepts, Hapludults, Ochraquults)	53. Cahaba-	*	SS	NS
	Chewacla-	*	NS	
	Myatt	*	NS	
7. Soils of the coastal marshes. (Medisaprists, Quartzipsamments)	54. Dorovan-	*	NS	NS
	Plummer-	*	SS	
	Tidal Marsh	*	NS	
	55. Osier-	8	NS	NS
	Johnston	*	NS	

CONNECTICUT

Land Resources	Soil Association	CEC	Suscept. Level	Assoc. Suscept. Rating
1. Areas of the eastern and western highlands dominated by soils formed in glacial till derived from gneiss, schist, and granite.	1. Brimfield- Brookfield	* *	NS NS	NS
	2. Hollis- Bernardston	* *	SS NS	SS2
	3. Hollis- Charlton	* 14.3	SS SS	SS1
	4. Hollis- Woodbridge	* 17.5	SS NS	SS2
	5. Broadbrook- Rainbow	* *	NS NS	NS
	6. Paxton- Woodbridge	21.8 17.5	NS NS	NS
	7. Canton- Hollis- Charlton	* * 14.3	SS SS SS	SS1
	8. Charlton- Hollis	14.3 *	SS SS	SS1
	9. Narragansett- Hollis	* *	NS SS	NS
2. Areas of the eastern and western highlands dominated by soils formed in stratified deposits derived from gneiss, schist, and granite.	10. Agawam- Merrimac- Hinckley	6.9 41.1 7.6	SS NS SS	SS2
	11. Haven- Reypol	* *	NS NS	NS
	12. Hinckley- Merrimac	7.6 41.1	SS NS	SS2
3. Areas of the western highlands dominated by soils formed in glacial till derived from limestone and schist.	13. Stockbridge- Farmington- Amenia	15.1 * 18.1	NS NS NS	NS

CONNECTICUT

4. Areas of the western highlands dominated by soils formed in stratified deposits derived from limestone and schist.	14. Copake-	*	SS	SS1
	Groton	*	SS	
5. Areas of the central lowlands of the Connecticut River Valley dominated by soils formed in glacial till derived from sandstone, shale, conglomerate, and basalt.	15. Cheshire-	*	SS	NS
	Wetherfield-	*	NS	
	Holyoke	*	NS	
	16. Cheshire-	*	SS	SS1
	Yalesville	*	SS	
	17. Narragansett-	*	NS	NS
	Broadbrook-	*	NS	
	Holyoke	*	NS	
	18. Narragansett-	*	NS	NS
	Chelshire	*	SS	
	19. Holyoke-	*	NS	NS
	Wethersfield-	*	NS	
	Chelshire	*	SS	
	20. Wethersfield-	*	NS	NS
	Holyoke-	*	NS	
	Broadbrook	*	NS	
	21. Wethersfield-	*	NS	NS
	Ludlow	*	SS	
6. Areas of the central lowlands of the Connecticut River Valley demonated by soils formed in stratified deposits derived from sandstone, shale, conglomerate, and basalt.	22. Branford-	*	SS	SS1
	Manchester	*	SS	
	23. Enfield-	*	SS	SS1
	Agawam-	6.9	SS	
	Manchester	*	SS	
	24. Hartford-	*	SS	SS1
	Manchester	*	SS	
	25. Penwood-	*	SS	SS1
	Manchester	*	SS	
	26. Windsor-	6.0	S	NS
	Ninigret-	17.1	NS	
	Merrimac	41.1	NS	
	27. Elmwood-	*	NS	NS
	Buxton-	20.5	NS	
	Scantic	*	NS	
	28. Scantic-	*	NS	NS
	Buxton-	20.5	NS	
	Broadbrook	*	NS	

CONNECTICUT

	29. Hadley- Winooski	11.8 19.6	SS NS	SS2
	30. Rumney- Podunk	* 14.5	NS SS	NS
7. Areas of the coastal lowlands affected by tidal water dominated by soils formed in organic matter.	31. Westbrook	*	NS	NS

DELAWARE

Land Resources	Soil Associations	CEC	Suscept. Levels	Assoc. Suscept. Rating
1. Rolling soils of the piedmont.	1. Gleneg-	22.2	NS	NS
	Manor-	13.7	SS	
	Chester	16.6	NS	
	2. Neshaminy-	14.6	SS	NS
	Aldino-	*	NS	
	Wetchung	*	NS	
2. Gently sloping soils along the fall line.	3. Neshaminy-	14.6	SS	NS
	Talleyville-	*	NS	
	Urban land	*	NS	
	4. Elsinboro-	*	NS	NS
	Delanco-	*	NS	
	Urban land	*	NS	
	5. Urban land	*	NS	NS
	6. Aldino-	*	NS	NS
	Keyport-	*	NS	
	Mattapex-	12.3	SS	
	Urban land	*	NS	
3. Nearly level soils of the coastal plain--dominately well-drained.	7. Matapeake-	14.8	SS	SS2
	Sassafras-	6.4	SS	
	Urban land	*	NS	
	8. Sassafras-	6.4	SS	SS2
	Fallsington-	*	NS	
	Matapeake	14.8	SS	
	9. Matapeake-	14.8	SS	SS1
	Sassafras	6.4	SS	
	10. Sassafras-	6.4	SS	SS2
	Fallsington	*	NS	
	11. Evesboro-	3.8	S	SS1
	Rumford-	*	SS	
	Fallsington	*	NS	
4. Nearly level soils of the coastal plain--dominately moderately well-drained to poorly drained.	12. Fallington-	*	NS	SS2
	Sassafras-	6.4	SS	
	Woodstown	8.9	SS	
	13. Keyport-	*	NS	NS
	Elkton	*	NS	

DELAWARE

	14. Othello-	*	NS	SS2
	Matapeake-	14.8	SS	
	Mattapex	12.3	SS	
	15. Elkton-	*	NS	NS
	Matawan-	*	NS	
	Keyport	*	NS	
5. Nearly level soils of the coastal plain--dominately very poorly drained.	16. Pocomoke-	*	NS	NS
	Fallsington-	*	NS	
	Evesboro	3.8	S	
	17. Fallsington-	*	NS	NS
	Pocomoke-	*	NS	
	Woodstown	8.9	SS	
	18. Pocomoke-	*	NS	NS
	Fallsington-	*	NS	
	Sassafras	6.4	SS	
6. Nearly level soils of the coastal plain--wetlands.	19. Tidal marsh-	*	NS	NS
	Coastal beach	*	NS	
	20. Muck-	*	NS	NS
	Pocomoke-	*	NS	
	Swamp	*	NS	
	21. Tidal fresh-water marsh	*	NS	NS

FLORIDA

Land Resource	Soil Association	CEC	Suscept. Level	Assoc. Suscept. Rating
1. Areas dominated by excessively drained soils - soils dominantly thick acid sands	1. St. Lucie- Lakewood- Pomello	* * *	S S SS	S2
2. Areas dominated by excessively drained soils - soils dominantly thick neutral to alkaline sands.	2. Palm Beach- Cocoa	* *	S SS	S2
3. Areas dominated by well-drained to moderately well drained soils. Soils dominantly thick to moderately thick acid sands.	3. Lakeland- Eustis- Blanton	2.4 4.8 5.6	S S S	S1
	4. Lakeland- Eustis- Norfolk	2.4 4.8 3.9	S S S	S1
4. Areas dominated by well drained to moderately well drained soils. Soils dominantly thick to thin sands influenced by alkaline materials.	5. Jonesville- Chiefland- Hernando	* * *	NS NS -	NS
	6. Hernando- Chiefland- Jonesville	* * *	- NS NS	NS
5. Areas dominated by well drained to moderately well drained soils. Soils dominantly thick to thin phosphatic sands and loamy sands overlying finer-textured materials.	7. Arredondo- Gainesville- Fort Meade	* * *	SS S SS	SS1
	8. Hague- Zuber- Fellowship	* 7.5 *	NS SS NS	NS
6. Areas dominated by well drained to moderately well drained soils. Soils dominantly thin acid sand to sandy loam overlying finer-textured subsoils.	9. Norfolk- Ruston- Orangeburg	3.9 5.7 7.0	S S SS	S2
	10. Magnolia- Faceville- Tifton	* * 7.0	- SS SS	SS1

FLORIDA

	11. Shubuta-	6.8	SS	SS1
	Cuthbert-	*	SS	
	Lakeland	2.4	S	
	12. Kalmia-	*	SS	SS1
	Cahaba	*	SS	
7. Areas dominated by well drained to moderately well drained soils. Soils dominantly thick to thin acid sands, some of which overlie finer-textured subsoils.	13. Blanton-	5.6	S	S2
	Klej	*	NS	
	14. Kanapaha-	*	NS	NS
	Blanton	5.6	S	
	15. Rex-	*	-	S1
	Blanton	5.6	S	
	16. Blanton-	5.6	S	S2
	Bowie	2.4	S	
	Susquehanna	8.9	SS	
	17. Goldsboro-	12.3	SS	SS1
	Lynchburg	6.0	S	
8. Areas dominated by somewhat poorly drained soils. Soils dominantly thick acid sands with organic pans; interspersed with soils without a pan formation.	18. Leon-	*	NS	NS
	Plummer-	*	NS	
	Rutlege	*	NS	
	19. Leon-	*	NS	NS
	Immokalee-	6.5	SS	
	Pompano	*	NS	
	20. Leon-	*	NS	NS
	Pomello-	*	SS	
	Plummer	*	NS	
	21. Leon-	*	S	SS1
	Blanton-	5.6	S	
	Plummer	*	NS	
9. Areas dominated by somewhat poorly drained soils. Soils dominantly thick acid sands with dark surface soils.	22. Scranton-	*	NS	NS
	Ona	11.1	SS	
10. Areas dominated by somewhat poorly drained soils. Soils dominantly thick to thin sands overlying finer-textured alkaline materials.	23. Adamsville-	*	NS	NS
	Pompano	*	NS	
	24. Sunniland-	*	-	S2
	Bradenton	5.5	S	
	25. Panasoffkee-	*	NS	NS
	Bushnell	*	NS	

	26. Broward-	3.2	S	SS1
	Parkwood-	12.1	SS	
	Keri	7.1	SS	
11. Areas dominated by poorly to very poorly drained soils. Soils dominantly thick to thin sand to sandy loam surface soils overlying finer-textured acid subsoils.	27. Coxville-	*	NS	SS2
	Bladen-	11.0	SS	
	Weston	4.6	S	
	28. Leaf-	15.9	NS	SS2
	Bladen-	11.0	SS	
	Rains	13.1	SS	
	29. Plummer-	*	NS	NS
	Rutlege	*	NS	
	30. Bayboro-	39.9	NS	NS
	Portsmouth-	*	NS	
	Rains	13.1	SS	
12. Areas dominated by poorly to very poorly drained soils. Soils dominantly moderately thick to thin sands to sandy loams overlying finer-textured alkaline materials.	31. Pompano-	*	NS	NS
	Charlotte-	*	NS	
	Delray	19.3	NS	
	32. Manatee-	*	NS	NS
	Felda	5.4	S	
13. Areas dominated by poorly to very poorly drained soils. Soils dominantly moderately thick to thin marly materials overlying limestone.	33. Perrine-	*	-	NS
	Ochopee	*	-	
14. Areas dominated by poorly to very poorly drained soils-dominantly peats and mucks.	34. Everglades-	*	NS	NS
	Brighton-	*	NS	
	Pamlico	*	SS	
15. Miscellaneous Land Types.	35. Fresh water swamp-	*	NS	NS
	Marsh	*	NS	
	36. Tidal Marsh-	*	NS	NS
	Coastal Beach-	*	NS	
	Coastal Dunes	*	SS	
	37. Rockland	*	SS	SS1

- No information available.

GEORGIA

Land Resources	Soil Association	CEC	Suscept. Level	Assoc. Suscept. Rating
1. Sand Mountain	1. Hartsells-	*	SS	SS1
	Hector	*	SS	
	2. Nella-	*	SS	SS1
	Townley	*	SS	
	Hector	*	SS	
2. Appalachian Valleys and Ridges	3. Conasauga-	*	NS	NS
	Lyerly-	*	NS	
	Wolftever	21.1	NS	
	4. Shack-	*	SS	SS1
	Fullerton-	8.2	SS	
	Bodine (2-10% slopes)	8.7	SS	
	5. Shack-	*	SS	SS1
	Fullerton-	8.2	SS	
	Bodine (10-60% slopes)	8.7	SS	
	6. Etowah-	8.6	SS	SS1
	Holston-	9.5	SS	
	Rome	*	SS	
	7. Townley-	*	SS	SS1
	Cunningham-	*	SS	
	Montevallo	*	SS	
	8. Townley-	*	SS	SS1
	Montevallo-	*	SS	
	Cunningham	*	SS	
	9. Nella-	*	SS	SS1
	Townley-	*	SS	
	Hector	*	SS	
	10. Cartecay-	*	NS	NS
	Toccoa-	*	SS	
	Wehadkee	*	NS	
3. Blue Ridge Area	11. Hayesville-	6.6	SS	SS1
	Braddock-	*	SS	
	Dyke	*	SS	

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	12. Saluda-	*	SS	SS1
	Hayesville-	6.6	SS	
	Fannin	*	SS	
	13. Hayesville-	6.6	SS	SS1
	Fannin-	*	SS	
	Braddock	*	SS	
	14. Hayesville-	6.6	SS	SS1
	Madison-	*	SS	
	Tallapoosa	*	SS	
	15. Tallapoosa-	*	SS	SS1
	Hayesville-	6.6	SS	
	Talladega	*	SS	
	16. Ashe-	*	SS	SS1
	Porters-	*	SS	
	Edneyville	*	SS	
	17. Cartecay-	*	NS	NS
	Toccoa-	*	SS	
	Wehadkee	*	NS	
	18. Transylvania-	*	SS	SS2
	Toxaway	*	NS	
	19. Hector-	*	SS	SS2
	DeKalb-	17.3	NS	
	Tallapoosa	*	SS	
4. Piedmont	20. Cecil-	8.4	SS	SS1
	Madison-	*	SS	
	Appling-	*	SS	
	Gwinnett	*	SS	
	21. Pacolet-	*	SS	SS1
	Gwinnett-	*	SS	
	Madison	*	SS	
	22. Tallapoosa-	*	SS	SS1
	Grover-	*	SS	
	Madison	*	SS	
	23. Louisburg-	*	SS	SS2
	Louisa-	*	SS	
	Wilkes	*	NS	
	24. Mountainburg-	*	SS	SS1
	Pacolet-	*	SS	
	Holston	9.5	SS	
	25. Helena-	*	NS	NS
	Enon-	*	SS	
	Iredell	*	NS	

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	26. Iredell-	*	NS	NS
	Wilkes-	*	NS	
	Mecklenburg	*	NS	
	27. Cartecay-	*	NS	NS
	Toccoa-	*	SS	
	Wehadkee	*	NS	
	28. Urban Area	-	-	NS
5. Sand Hills	29. Lakeland-	2.4	S	S2
	Troup-	*	SS	
	Lucy	3.4	S	
	30. Lakeland-	2.4	S	S2
	Blaney-	*	SS	
	Lucy	3.4	S	
	31. Greenville-	11.2	SS	SS1
	Faceville-	*	SS	
	Orangeburg	7.0	SS	
	32. Orangeburg-	7.0	SS	SS1
	Dothan-	7.9	SS	
	Faceville-	*	SS	
	Lucy	3.4	S	
	33. Cowarts-	*	SS	NS
	Sawyer-	*	NS	
	Susquehanna	*	NS	
	34. Gilead-	*	SS	SS1
	Norfolk	3.9	S	
	35. Vaucluse-	*	SS	SS1
	Blaney-	*	SS	
	Gilead	*	SS	
	36. Bibb-	*	NS	NS
	Osier-	*	NS	
	Meggett-	*	NS	
	Rains	13.1	SS	
	37. Meggett-	*	NS	SS2
	Bladen-	11.0	SS	
	Rains	13.1	SS	
	38. Chewacla-	*	NS	NS
	Wehedkee-	*	NS	
	Rains	13.1	SS	
	39. Dothan-	7.9	SS	SS1
	Tifton-	6.5	SS	
	Fuquay	*	SS	

	40. Americus-	3.9	S	S2
	Lucy-	3.4	S	
	Troup	*	SS	
	41. Ailey-	*	SS	SS1
	Troup-	*	SS	
	Vaucluse	*	SS	
6. Black Lands	42. Oktibbeha-	*	NS	NS
	Sumter-	*	NS	
	Susquehanna	*	NS	
7. Southern Coastal Plain	43. Kershaw-	*	SS	SS1
	Lakeland	2.4	S	
	44. Lakeland-	2.4	S	S2
	Troup-	*	SS	
	Lucy	3.4	S	
	45. Lakeland-	2.4	S	S2
	Blaney-	*	SS	
	Lucy	3.4	S	
	46. Lakeland-	2.4	S	S2
	Surrency	*	NS	
	47. Valdosta-	*	SS	SS2
	Pelham-	*	NS	
	Lowndes	*	SS	
	48. Americus-	3.9	S	S2
	Lucy-	3.4	S	
	Troup	*	SS	
	49. Cowarts-	*	SS	SS2
	Duplin	*	NS	
	50. Cowarts-	*	SS	NS
	Duplin-	*	NS	
	Susquehanna	*	NS	
	51. Esto-	*	SS	SS2
	Susquehanna-	*	NS	
	Cowarts	*	SS	
	52. Boswell-	*	NS	NS
	Duplin-	*	NS	
	Susquehanna	*	NS	
	53. Cowarts-	*	SS	SS1
	Norfolk-	3.9	S	
	Wagram	*	SS	
	54. Dothan-	7.9	SS	SS1
	Tifton-	6.5	SS	
	Fuquay	*	SS	

55. Cowarts-	*	SS	SS1
Carnegie-	*	SS	
Fuquay	*	SS	
56. Fuquay-	*	SS	SS1
Cowarts-	*	SS	
Troup	*	SS	
57. Troup-	*	SS	SS1
Fuquay	*	SS	
58. Wagram-	*	SS	SS1
Lucy-	3.4	S	
Troup-	*	SS	
Norfolk	3.9	S	
59. Fuquay-	*	SS	SS2
Grady-	*	NS	
Tifton	6.5	SS	
60. Gilead-	*	SS	SS1
Norfolk	3.9	S	
61. Norfolk-	3.9	S	SS1
Cowarts-	*	SS	
Gilead	*	SS	
62. Norfolk-	3.9	S	SS1
Tifton-	6.5	SS	
Wagram	*	SS	
63. Orangeburg-	7.0	SS	SS1
Faceville-	*	SS	
Lucy-	3.4	S	
Dothan	7.9	SS	
64. Tifton-	6.5	SS	SS1
Alapaha-	*	NS	
Norfolk	3.9	S	
65. Tifton-	6.5	SS	SS1
Grady-	*	NS	
Norfolk	3.9	S	
66. Orangeburg-	7.0	SS	SS1
Red Bay-	7.0	SS	
Norfolk	3.9	S	
67. Tifton-	6.5	SS	SS1
Greenville-	11.2	SS	
Faceville	*	SS	
68. Orangeburg-	7.0	SS	SS1
Faceville	*	SS	
Red Bay	7.0	SS	

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69.	Carnegie-	*	SS	SS1
	Henderson	*	SS	
70.	Orangeburg-	7.0	SS	SS1
	Faceville-	*	SS	
	Greenville	11.2	SS	
71.	Greenville-	11.2	SS	SS1
	Faceville-	*	SS	
	Orangeburg	7.0	SS	
72.	Faceville-	*	SS	SS1
	Orangeburg-	7.0	SS	
	Greenville	11.2	SS	
73.	Vaucluse-	*	SS	SS1
	Blaney-	*	SS	
	Gilead	*	SS	
74.	Carnegie-	*	SS	SS2
	Sawyer-	*	NS	
	Tifton	6.5	SS	
75.	Marlboro-	4.6	S	SS1
	Tifton-	6.5	SS	
	Dothan	7.9	SS	
76.	Esto-	*	SS	SS2
	Vaucluse-	*	SS	
	Boswell	*	NS	
77.	Bladen-	11.0	SS	SS2
	Duplin	*	NS	
78.	Craven-	*	NS	NS
	Wahee-	*	NS	
	Congaree	*	SS	
79.	Ardilla-	*	NS	NS
	Wahee-	*	NS	
	Ocilla	*	NS	
80.	Leefield-	*	NS	NS
	Stilson-	*	SS	
	Pelham	*	NS	
81.	Pelham-	*	NS	NS
	Ocilla	*	NS	
82.	Leefield-	*	NS	NS
	Irvington-	14.4	SS	
	Pelham	*	NS	

	83. Bibb-	*	NS	NS
	Osier-	*	NS	
	Meggett-	*	NS	
	Rains	13.1	SS	
	84. Kinston-	*	NS	NS
	Bibb-	*	NS	
	Osier	*	NS	
	85. Chewacla-	*	NS	NS
	Wehadkee-	*	NS	
	Rains	13.1	SS	
	86. Angie-	*	NS	NS
	Meggett-	*	NS	
	Wahee-	*	NS	
	87. Meggett-	*	NS	SS2
	Bladen-	11.0	SS	
	Rains	13.1	SS	
	88. Grady-	*	NS	NS
	Troup-	*	SS	
	Ocilla-	*	NS	
	89. Goldsboro-	12.3	SS	SS2
	Ardilla-	*	NS	
	Rains	13.1	SS	
8. Atlantic Coast Flatwoods	90. Tifton-	6.5	SS	SS2
	Fuquay-	*	SS	
	Pelham	*	NS	
	91. Cowarts-	*	SS	SS1
	Carnegie-	*	SS	
	Fuquay	*	SS	
	92. Lakeland-	2.4	S	NS
	Chipley-	*	NS	
	Surrency	*	NS	
	93. Kershaw-	*	SS	SS2
	Pelham	*	NS	
	94. Leefield-	*	NS	NS
	Irvington-	14.4	SS	
	Pelham	*	NS	
	95. Leefield-	*	NS	NS
	Mascotte-	*	NS	
	Pelham	*	NS	
	96. Ocilla-	*	NS	NS
	Pelham-	*	NS	
	Olustee	*	NS	

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97.	Echaw-	*	SS	NS
	Rutlege-	*	NS	
	Mascotte	*	NS	
98.	Mascotte-	*	NS	NS
	Pelham-	*	NS	
	Leon	*	NS	
99.	Leon-	*	NS	NS
	Rutlege	*	NS	
100.	Pelham-	*	NS	NS
	Rains-	13.1	SS	
	Ellabelle	*	NS	
101.	Bladen-	11.0	SS	SS2
	Bayboro	39.9	NS	
102.	Bladen-	11.0	SS	SS2
	Duplin	*	NS	
103.	Johnston-	*	NS	NS
	Rains-	13.1	SS	
	Ellabelle	*	NS	
104.	Istokpoga-	*	NS	NS
	Rutlege-	*	NS	
105.	Bayboro-	39.9	NS	NS
	Rains	13.1	SS	
106.	Tidal Marsh-	*	NS	NS
	Capers	*	NS	
107.	Chewacla-	*	NS	NS
	Wehadkee-	*	NS	
	Rains	13.1	SS	
108.	Troup-	*	SS	SS1
	Fuquay	*	SS	
109.	Kinston-	*	NS	NS
	Bibb-	*	NS	
	Osier	*	NS	
110.	Meggett-	*	NS	SS2
	Bladen-	11.0	SS	
	Rains	13.1	SS	
111.	Tifton-	6.5	SS	SS1
	Alpaha-	*	NS	
	Norfolk	3.9	S	

ILLINOIS

Land Resources	Soil Association	CEC	Suscept. Level	Assoc. Sucept. Rating
1. Dark-colored soils developed primarily from loess.	1. Joy-	*	NS	NS
	Tama-	28.1	NS	
	Muscatine-	36.3	NS	
	Ipava-	*	NS	
	Sable	58.1	NS	
	2. Sidell-	*	NS	NS
	Catlin-	*	NS	
	Flanagan-	*	NS	
	Drummer	*	NS	
	3. Wenona-	*	NS	NS
	Rutland-	*	NS	
	Streator	*	NS	
	4. Harrison-	*	NS	NS
	Herrick-	*	NS	
	Virden	*	NS	
	5. Oconee-	*	NS	NS
	Cowden-	*	NS	
	Piasa	*	NS	
	6. Hoyleton-	*	NS	NS
	Cisne-	*	NS	
	Huey	*	NS	
2. Dark-colored soils developed primarily from glacial drift.	7. Warsaw-	25.9	NS	NS
	Carmi-	*	NS	
	Rodman	*	SS	
	8. Ringwood-	*	NS	NS
	Griswold-	*	NS	
	Durand	*	NS	
	9. LaRose-	*	NS	NS
	Saybrook-	*	NS	
	Lisbon	*	NS	
	10. Elliott-	*	NS	NS
	Ashkum-	44.2	NS	
	Andres	*	NS	
	11. Swygert-	*	NS	NS
	Bryce-	*	NS	
	Clarence-	*	NS	
	Rowe	*	NS	

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3. Light-colored soils developed primarily from loess.	12. Seaton-	16.3	NS	NS
	Fayette-	12.6	SS	
	Stronghurst	*	NS	
	13. Birkbeck-	*	NS	NS
	Ward-	*	-	
	Russell	15.9	NS	
	14. Clary-	*	-	NS
	Clinton-	*	NS	
	Keomah	*	NS	
	15. Stookey-	*	NS	NS
	Alford-	15.0	NS	
	Muren	*	NS	
	16. Hosmer-	*	NS	NS
	Stoy-	*	NS	
	Weir	*	NS	
	17. Ava-	*	NS	NS
	Bluford-	*	NS	
	Wynoose	*	NS	
	18. Grantsburg-	*	NS	NS
	Robbs-	*	NS	
	Wellston	14.8	SS	
4. Light-colored soils developed primarily from glacial drift.	19. Fox-	14.2	SS	SS2
	Homer-	*	NS	
	Casco	*	SS	
	20. McHenry-	17.5	NS	NS
	Lapeer-	*	NS	
	Pecatonica	*	NS	
	21. Strawn-	*	NS	NS
	Miami	23.2	NS	
	22. Morley-	17.5	NS	NS
	Blount-	20.8	NS	
	Beecher-	*	NS	
	Eylar	*	-	
5. Dark-and light-colored soils developed primarily from medium- and fine-textured outwash.	23. Littleton-	*	NS	NS
	Proctor-	*	NS	
	Plano-	*	NS	
	Camden-	*	NS	
	Hurst-	*	NS	
	Ginat	*	NS	
6. Dark-and light-colored soils developed primarily from sandy material.	24. Hagener-	*	-	SS2
	Ridgeville-	*	NS	
	Bloomfield-	*	SS	
	Alvin	*	NS	

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7. Dark-and light-colored soils developed primarily from medium-textured material on bedrock.	25. Channahon-	*	NS	NS
	Dodgeville-	*	NS	
	Dubuque-	*	NS	
	Derinda	*	NS	
8. Dark-and light-colored soils developed primarily from alluvium.	26. Lawson-	*	NS	NS
	Beaucoup-	*	NS	
	Darwin-	*	NS	
	Haymond-	18.9	NS	
	Belknap	*	NS	

INDIANA

Land Resource	Soil Association	CEC	Suscept. Level	Assoc. Suscept. Rating
1. Nearly level, well and poorly drained, loamy soils on flood plains	1. Genesee-	16.3	NS	NS
	Eel-	17.8	NS	
	Shoals	*	NS	
	2. Fox-	14.2	SS	NS^{o}
	Genesee-	16.3	NS	
	Eel	17.8	NS	
	3. Sloan-	25.2	NS	NS
	Ross-	16.8	NS	
	Vincennes-	15.6	NS	
	Zipp	25.4	NS	
	4. Stendal-	*	NS	NS
	Haymond-	18.9	NS	
	Wakeland-	13.3	SS	
	Nolin	21.3	NS	
	5. Wheeling-	10.5	SS	NS^{o}
	Huntington-	21.2	NS	
	Lindsdale	*	NS	
2. Nearly level, poorly drained, sandy soils and organic soils	6. Houghton-	*	NS	NS
	Adrian	51.6	NS	
	7. Maumee-	15.5	NS	NS
	Gilford-	16.8	NS	
	Sebewa	*	NS	
3. Nearly level, poorly drained, loamy soils in outwash and lacustrine deposits	8. Rensselaer-	34.1	NS	NS
	Darroch-	53.7	NS	
	Whitaker	15.1	NS	
	9. Sebewa-	*	NS	NS
	Gilford-	16.8	NS	
	Homer	*	NS	
	10. Lyles-	15.2	NS	SS2
	Ayrshire-	7.9	SS	
	Princeton	13.1	SS	
4. Nearly level, poorly drained, clayey soils in lacustrine deposits	11. Milford-	42.1	NS	NS
	Bono-	*	NS	
	Rensselaer	34.1	NS	

	12. Patton-	44.6	NS	NS
	Lyles-	15.2	NS	
	Henshaw	13.2	SS	
	13. Zipp-	25.4	NS	NS
	Markland-	*	NS	
	McGary	18.9	NS	
5. Level and sloping, well-drained, loamy soils on sandy and gravelly outwash deposits	14. Tracy-	*	NS	NS
	Door-	*	NS	
	Lydick	*	NS	
	15. Elston-	14.8	SS	SS2
	Shipshe-	12.6	SS	
	Warsaw	25.9	NS	
	16. Oshtemo-	6.3	SS	SS1
	Fox	14.2	SS	
	17. Fox-	14.2	SS	SS2
	Ockley-	13.6	SS	
	Westland	29.0	NS	
	18. Parke-	15.8	NS	NS
	Negley	11.4	SS	
6. Sloping, well-drained, and nearly level poorly drained, sandy soils	19. Oakville-	4.2	S	S2
	Adrian	51.6	NS	
	20. Plainfield-	5.5	S	SS1
	Maumee-	15.5	NS	
	Oshtemo	6.3	SS	
7. Sloping, well-drained, loamy soils in Eolian sand deposits	21. Princeton-	13.1	SS	SS1
	Bloomfield-	5.7	SS	
	Ayrshire	7.9	SS	
8. Sloping, well-drained, silty soils in loess	22. Alford	15.0	NS	NS
9. Nearly level, poorly drained silty soils in loess or loess and glacial till	23. Ragsdale-	34.8	NS	NS
	Raub	*	NS	
	24. Sable-	58.1	NS	NS
	Ipava	*	NS	
	25. Fincastle-	14.5	SS	NS
	Ragsdale	34.8	NS	
	26. Reesville-	15.7	NS	NS
	Ragsdale	34.8	NS	

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	27. Iva-	12.9	SS	SS1
	Vigo	12.6	SS	
10. Nearly level, poorly drained, loamy soils in glacial till	28. Brookston-	31.3	NS	NS
	Odell-	32.0	NS	
	Corwin	*	NS	
	29. Crosier-	13.4	SS	SS2
	Brookston	31.3	NS	
	30. Crosby-	20.3	NS	NS
	Brookston	31.3	NS	
11. Nearly level, poorly drained, clayey soils in glacial till	31. Blount-	20.8	NS	NS
	Pewamo	30.6	NS	
	32. Hoytville-	33.5	NS	NS
	Nappanee	28.1	NS	
12. Sloping well-drained, and nearly level poorly drained, loamy and silty soils in glacial till	33. Parr-	*	NS	NS
	Brookston	31.3	NS	
	34. Riddles-	11.7	SS	SS1
	Tracy-	*	NS	
	Chelsea	4.9	S	
	35. Miami-	23.2	NS	SS2
	Crosier-	13.4	SS	
	Brookston-	31.3	NS	
	Riddles	11.7	SS	
	36. Miami-	23.2	NS	NS
	Crosby-	20.3	NS	
	Brookston	31.3	NS	
	37. Miami-	23.2	NS	NS
	Hennepin-	*	NS	
	Crosby	20.3	NS	
	38. Miami-	23.2	NS	NS
	Russell-	15.9	NS	
	Fincastle-	14.5	SS	
	Ragsdale	34.8	NS	
	39. Russell-	15.9	NS	NS
	Hennepin-	*	NS	
	Fincastle	14.5	SS	
13. Sloping well-drained, and nearly level poorly drained, clayey soils in glacial till	40. Markham-	*	NS	NS
	Elliott-	*	NS	
	Pewamo	30.6	NS	
	41. Morley-	17.5	NS	NS
	Blount-	20.8	NS	
	Pewamo	30.6	NS	

INDIANA

14. Nearly level, poorly drained silty soils with fragipans	42. Bartle-	12.7	SS	SS1
	Peoga-	12.7	SS	
	Dubois	12.2	SS	
	43. Weinbach-	18.8	NS	NS
	Wheeling	10.5	SS	
	44. Avonburg-	12.2	SS	SS1
	Clermont	11.6	SS	
15. Sloping, well-drained, silty soils with fragipans	45. Hosmer	7.9	SS	SS1
	46. Zanesville-	10.4	SS	SS1
	Wellston-	14.8	SS	
	Tilsit	12.2	SS	
	47. Cincinnati-	15.2	NS	NS
	Vigo-	12.6	SS	
	Ava	*	NS	
	48. Cincinnati-	15.2	NS	NS
	Rossmoyne	14.0	SS	
16. Sloping, well-drained, silty soils in loess and weathered shale and sandstone	49. Wellston-	14.8	SS	SS1
	Zanesville-	10.4	SS	
	Berks	13.1	SS	
17. Sloping, well-drained, silty and clayey soils in loess and weathered limestone	50. Crider-	15.6	NS	NS
	Bedford-	14.2	SS	
	Lawrence	*	NS	
	51. Crider-	15.6	NS	NS
	Hagerstown-	16.7	NS	
	Bedford	14.2	SS	
	52. Crider-	15.6	NS	NS
	Baxter-	*	NS	
	Corydon	*	NS	
18. Steep, well-drained, shallow or stony soils in weathered sedimentary rocks	53. Berks-	13.1	SS	SS1
	Gilpin-	13.2	SS	
	Weikert	*	SS	
	54. Corydon-	*	NS	SS2
	Weikert-	*	SS	
	Berks	13.1	SS	
	55. Eden-	30.9	NS	NS
	Switzerland	13.6	SS	

o Floodplain

KENTUCKY

Land Resource	Soil Association	CEC	Suscept. Level	Assoc. Suscept. Rating
1. Deep, well-drained to poorly drained soils on nearly level flood plains and undulating terraces of the major streams.	1. Sharkey-	43.8	NS	NS
	Commerce	*	NS	
	2. Huntington-	13.9	SS	SS2
	Melvin	*	NS	
	3. Falaya-	13.4	SS	SS1
	Henry	10.7	SS	
	4. Uniontown-	13.4	SS	SS2
	Patton	*	NS	
	5. Belknap-	*	NS	NS
	Karnak	*	NS	
	6. Elk-	*	SS	NS
	Weinback-	*	NS	
	Melvin	*	NS	
	7. Wheeling-	13.7	SS	SS1
	Huntington	13.9	SS	
	8. Pope-	*	SS	SS2
	Bonnie-	*	NS	
	Allegheny	6.8	SS	
	9. Morehead-	*	NS	SS2
	Whitley-	*	SS	
	Cuba	*	SS	
2. Deep, well-drained to poorly drained soils, formed in loess on undulating and hilly uplands.	10. Memphis-	13.1	SS	SS1
	Loring	12.2	SS	
	11. Grenada-	11.5	SS	SS1
	Loring	12.2	SS	
	12. Brandon-	*	SS	SS1
	Loring-	12.2	SS	
	Saffell	*	SS	

KENTUCKY

3. Deep and moderately deep, well-drained soils, formed in residuum from acid shales, siltstone and sandstone with most areas having a thin loess mantle on hilly uplands and undulating broad ridgetops.	13. Zanesville- Frondorf	10.4 *	SS SS	SS1
	14. Caneyville- Zanesville- Frondorf	* 10.4 *	NS SS SS	SS2
	15. Loring- Wellston	12.2 12.7	SS SS	SS1
	16. Sadler- Zanesville	* 10.4	NS SS	NS
	17. Riney	*	SS	SS1
4. Deep, well-drained soils, formed in residuum from limestone with most areas having a thin loess mantle on undulating to rolling upland plains.	18. Crider- Cumberland	11.2 10.2	SS SS	SS1
	19. Baxter- Crider	9.1 11.2	SS SS	SS1
	20. Fredonia- Cumberland	* 10.2	NS SS	NS
	21. Crider- Vertress	11.2 *	SS NS	SS2
	22. Sonora- Gatton	* *	NS NS	NS
5. Deep and moderately deep, well-drained soils formed in residuum of cherty or shaly limestone on hilly upland.	23. Trimble- Baxter	* 9.1	SS SS	SS1
	24. Garmon- Frederick	* *	SS SS	SS1
	25. Frederick- Mountview	* *	SS SS	SS1
6. Deep, well-drained soils on undulating broad ridgetops and moderately deep or shallow well-drained soils on hilly uplands, formed in residuum from limestone or interbedded shale and limestone.	26. Crider- Nicholson	11.2 *	SS NS	SS2
	27. Lowell- Fairmont	20.1 36.0	NS NS	NS
	28. Eden	38.2	NS	NS
	29. Beasley- Nicholson	16.8 *	NS NS	NS

KENTUCKY

	30. Fairmont-	36.0	NS	NS
	Faywood	*	NS	
	31. Nicholson-	*	NS	NS
	Faywood	*	NS	
	32. Maury-	*	NS	NS
	Mcafee	*	NS	
	33. Mcafee-	*	NS	NS
	Fairmont	36.0	NS	
	34. Otway-	32.5	NS	NS
	Beasley	16.8	NS	
7. Deep and moderately deep, well-drained soils formed in residuum or hillside creep material from acid sandstone, siltstone and shale on mountain sides.	35. Berks-	*	SS	SS1
	Cranston	*	SS	
	36. Latham-	*	NS	NS
	Shelocka	*	SS	
	37. Jefferson-	5.5	S	S2
	Shelocka	*	SS	
	38. Jefferson	5.5	S	S2
	Dekalb	*	SS	
	39. Shelocka-	*	SS	SS2
	Brookside	*	NS	
	40. Vandalia-	*	NS	NS
	Upshur	31.4	NS	
	41. Colyer-	*	SS	SS1
	Rockcastle	*	SS	
	42. Shelocka-	*	SS	SS1
	Gilpin	12.3	SS	

MARYLAND

Land Resource	Soil Association	CEC	Suscept. Level	Assoc. Suscept. Rating
1. Soils formed from consolidated sedimentary rocks.				
A. Areas dominated by medium-and moderately coarse-textured soils on residuum from gray, acid shale and sandstone, and their colluvial associates.				
1. Moderately deep well-drained gently sloping to moderately steep soils.	1. Gilpin-Dekalb	12.3 17.3	SS NS	SS2
2. Very shallow to moderately-deep excessively- to well-drained sloping to steep soils.	2. Dekalb-Gilpin-Ernest	17.3 12.3 11.0	NS SS SS	SS2
	3. Weikert-Berks	12.9 16.9	SS NS	SS2
	4. Weikert-Gilpin-Dekalb	12.9 12.3 17.3	SS SS NS	SS2
3. Well-and moderately well-drained undulating to rolling soils.	5. Cookport-Gilpin	7.6 12.3	SS SS	SS1
B. Areas dominated by medium-to moderately coarse-textured soils on residuum from red and mixed red and gray, acid shale and sandstone.				

MARYLAND

1. Shallow-to moderately deep, excessively-to moderately well-drained gently sloping soils.	6. Penn-Readington-Lewisberry	11.3 * *	SS NS SS	SS2
2. Shallow to moderately deep, excessively-to well-drained stony sloping to steep soils.	7. Weikert-Calvin-Dekalb	12.9 12.5 17.3	SS SS NS	SS2
	8. Lehew-Calvin	4.0 12.5	S SS	S2
	9. Lehew-Calvin-Dekalb	4.0 12.5 17.3	S SS NS	SS1
C. Areas dominated by medium-textured soils on residuum from limestone, calcareous shale, and interbedded limestone and shale.				
1. Deep well-drained sloping to sloping soils.	10. Hagerstown-Duffield	* 16.8	NS NS	NS
2. Shallow to moderately deep, excessively-to well-drained stony sloping to steep soils.	11. Elliber-Corydon-Dekalb	5.7 15.2 17.3	S NS NS	SS2
2. Soils formed from igneous and metamorphic rocks.				
A. Areas dominated by medium-textured soils on residuum from basic igneous and metamorphic rocks.				
1. Deep well-drained stony gently sloping to stony moderately steep soils.	12. Highfield-Fauquier	* *	SS SS	SS1

	13. Myersville-	*	SS	SS1
	Fauquier	*	SS	
	14. Neshaminy-	14.6	SS	SS1
	Montalto	*	SS	
2. Shallow to moderately deep, moderately well- to somewhat poorly-drained gently to steeply sloping soils.	15. Conowingo-	*	NS	NS
	Aldino-	*	NS	
	Chrome	*	NS	
B. Areas dominated by medium-textured soils on residuum from acid igneous and metamorphic rocks and their alluvial and colluvial associates.				
1. Moderately deep to deep well-drained gently sloping to moderately steep soils.	16. Manor-	13.7	SS	NS
	Glenelg-	22.2	NS	
	Chester	16.6	NS	
2. Shallow to moderately deep well-drained channery gently sloping to moderately steep soils.	17. Mt. Airy-	*	SS	SS2
	Glenelg-	22.2	NS	
	Linganore	*	SS	
3. Shallow to moderately deep well-drained stony sloping to steep soils.	18. Edgemont-	*	SS	SS2
	Chandler-	*	SS	
	Dekalb	17.3	NS	
4. Deep well-drained stony sloping to steep soils on colluvium.	19. Braddock-	*	NS	NS
	Thurmont	*	SS	

MARYLAND

5. Deep well-drained sloping soils on old alluvium over limestone residuum.	20. Baltimore-	*	NS	NS
	Manor	13.7	SS	
3. Soils formed from unconsolidated coastal plain sediments.				
A. Areas dominated by coarse-textured soils on sandy deposits.				
Excessively-drained undulating soils.	21. Lakeland-	*	SS	SS1
	Galestown-	6.1	SS	
	Rumford	*	SS	
B. Areas dominated by medium-and moderately coarse-textured soils on sandy and silty deposits.				
1. Well-and moderately well-drained undulating soils.	22. Sassafras-	6.4	SS	SS1
	Matapeake-	14.8	SS	
	Woodstown	8.9	SS	
2. Moderately well-to-very poorly-drained nearly level soils.	23. Fallsington-	*	NS	NS
	Woodstown-	8.9	SS	
	Othello-	*	NS	
	Pocomoke	*	NS	
3. Well-drained rolling to hilly soils developed in glauconitic deposits.	24. Collington-	17.1	NS	NS
	Monmouth	*	SS	
4. Well-drained rolling to hilly soils developed in sediments with little or no glauconite.	25. Westphalia-	4.3	S	S2
	Marr-	*	SS	
	Sassafras-	6.4	SS	
	Evesboro-	3.8	S	

5. Well-and moderately well-drained (with a fragipan) undulating to rolling soils.	26. Beltsville-	*	SS	SS2
	Caroline-	*	SS	
	Leonardtown	*	NS	
	27. Beltsville-	*	SS	SS1
	Chillum-	*	SS	
	Croom	*	SS	
	28. Beltsville-	*	SS	SS1
	Sassafras	6.4	SS	
C. Areas dominated by medium-to moderately fine-textured soils on silty and clayey deposits.				
1. Well-and moderately well-drained undulating soils.	29. Matapeake-	14.8	SS	SS1
	Mattapex-	12.3	SS	
	Butlertown	*	SS	
2. Moderately well-to poorly-drained nearly level soils.	30. Othello-	*	NS	NS
	Elkton-	*	NS	
	Mattapex-	12.3	SS	
	Keyport	*	NS	
3. Poorly-and very poorly-drained nearly level soils.	31. Othello-	*	NS	NS
	Portsmouth	*	NS	
D. Areas dominated by medium-and moderately coarse-textured soils on vari-colored sandy, silty, and clayey deposits.				
Well-drained undulating to rolling soils.	32. Christiana-	*	SS	SS1
	Sunnyside-	*	SS	
	Sassafras	6.4	SS	
E. Areas affected by tidal waters.	33. Tidal marshes	*	NS	NS
	Sand dunes	*	SS	
	Coastal Beaches	*	NS	
4. Soils formed from alluvial materials. Areas dominated by soils developed on flood plains and associated terraces.				

MARYLAND

Both well-and poorly-drained soils.	34.	Pope-	3.0	S	
		Hoston-	*	SS	
		Comus-	*	SS	SS1
		Elk-	*	SS	
		Bibb	*	NS	

LOUISIANA

Land Resource	Soil Association	CEC	Suscept. Level	Assoc. Suscept. Rating
1. Coastal Plain	1. Ruston-	5.7	S	S2
	Bowie-	2.4	S	
	Orangeburg-	7.0	SS	
	Beauregard	*	NS	
	2. Shubuta-	6.8	SS	SS1
	Kirvin-	*	SS	
	Nacogdotches-	*	NS	
	Luverne	*	SS	
	3. Susquehanna-	*	NS	NS
	Boswell-	*	NS	
	Sawyer	*	NS	
2. Mississippi Terrace and Loessial Hills	4. Memphis-	13.1	SS	SS1
	Loring-	12.2	SS	
	Grenada-	11.5	SS	
	Calloway	13.3	SS	
	5. Lexington-	9.2	SS	SS1
	Providence-	11.0	SS	
	Bude	9.7	SS	
	6. Lintonia-	*	-	NS
	Richland-	*	NS	
	Olivier-	*	NS	
	Calhoun	*	NS	
3. Flatwoods	7. Caddo-	*	NS	NS
	Beauregard-	*	NS	
	Hammond-	*	-	
	Wrightsville	*	NS	
4. Coastal Prairies	8. Crowley-	*	NS	NS
	Midland-	*	NS	
	Lake Charles	*	NS	
5. Recent Alluvium	9. Baldwin-	*	NS	NS
	Cypremorf-	*	-	
	Iberia	*	NS	

LOUISIANA

	10. Commerce-	*	NS	SS2
	Mhoon-	*	NS	
	Robinsville-	*	SS	
	Crevasse	*	S	
	11. Sharkey-	43.8	NS	NS
	Tunica-	*	NS	
	Swamp clays	*	NS	
	12. Yahola-	*	NS	NS
	Miller-	*	NS	
	Norwood-	*	NS	
	Perry	*	NS	
	13. Gallion-	*	NS	NS
	Pulaski-	*	SS	
	Perry-	*	NS	
	Portland	*	NS	
	14. Sharkey-	43.8	NS	NS
	Gallion-	*	NS	
	Perry-	*	NS	
	Hebert	*	NS	
	15. Bibb-	*	NS	NS
	Ochlockonee-	*	SS	
	Chastain-	*	NS	
	Waverly	*	NS	
6. Coastal Marsh	16. Marsh peats, mucks, clays-	*	NS	NS
	Harris-	*	NS	
	Palm Beach	*	S	

MAINE

Land Resource	Soil Association	CEC	Suscept. Level	Assoc. Suscept. Rating
1. Areas dominated by loamy soils on glaciated uplands	1. Bangor-	25.7	NS	SS2
	Dixmont-	16.0	NS	
	Thorndike	*	SS	
	2. Easton-	26.5	NS	SS2
	Burnham-	11.3	SS	
	Thorndike	*	SS	
	3. Telos-	*	NS	NS
	Coffeelos-	*	NS	
	Monson	*	NS	
	4. Chesuncook-	*	NS	NS
	Telos-	*	NS	
	Monson	*	NS	
	5. Monardo-	15.0	NS	SS2
	Burnham-	11.3	SS	
	Dixmont	16.0	NS	
	6. Caribou-	25.2	NS	NS
	Mapleton-	*	NS	
	Conant	26.7	NS	
	7. Perham-	24.7	NS	NS
	Daigle	20.5	NS	
	8. Thorndike-	*	SS	SS2
	Howland-	*	NS	
	Plaisted	21.7	NS	
	9. Peru-	20.9	NS	SS2
	Marlow-	27.1	NS	
	Lyman	*	SS	
	10. Berkshire-	25.8	NS	SS2
	Peru-	20.9	NS	
	Lyman	*	SS	
	11. Ridgebury-	14.7	SS	SS2
	Peru-	20.9	NS	
	Histosols	*	NS	

MAINE

	12.	Lyman-	*	SS	SS1
		Histosols-	*	NS	
		Rock outcrop	*	SS	
	13.	Hermon-	26.8	NS	SS2
		Lyman-	*	SS	
		Peru	20.9	NS	
2. Areas dominated by sandy and gravely soils on glacial outwash plains, deltas, terraces and eskers; and wet organic soils.	14.	Colton-	*	SS	SS1
		Adams-	*	SS	
		Histosols	*	NS	
	15.	Lyman-	*	SS	SS1
		AuGres-	11.2	SS	
		Histosols	*	NS	
	16.	Masardis-	*	NS	SS2
		Adams-	*	SS	
		Histosols	*	NS	
3. Areas dominated by bedrock, loamy soils on glacial till and silty and clayey soils on marine and lacustrine sediments.	17.	Lyman-	*	SS	SS2
		Scantic-	*	NS	
		Peru	20.9	NS	
	18.	Creasey-	*	SS	SS2
		Buxton-	20.5	NS	
		Scantic	*	NS	
	19.	Scantic-	*	NS	NS
		Peru-	20.9	NS	
		Marlow	27.1	NS	
	20.	Buxton-	20.5	NS	NS
		Salmon-	*	NS	
		Nicholville	*	NS	
	21.	Scantic-	*	NS	NS
		Histosols-	*	NS	
		Buxton	20.5	NS	
	22.	Scantic-	*	NS	NS
		Buxton-	20.5	NS	
		Adams	*	SS	
4. Areas dominated by recent alluvium.	23.	Ondawa-	6.33	SS	SS1
		Podunk	14.5	SS	

* No CEC available

o Bottomland

+ Lime influenced

MAINE

		Series	Family	Order
14	1. Adams	Sandy, mixed frigid	Typic Haplorthods	Spodosol
15	2. AuGres	Sandy, mixed, frigid	Entic Haplaquods	Spodosol
	3. Colton	Sandy-skeletal, mixed, frigid	Typic Haplorthods	Spodosol
16	4. Croghan	Sandy, mixed, frigid	Aquic Haplorthods	Spodosol
	5. Duane	Sandy-skeletal, mixed, frigid, ortstein	Typic Haplorthods	Spodosol
	6. Masardis	Sandy-skeletal, mixed, frigid	Typic Haplorthods	Spodosol
	7. Stetson	Sandy-skeletal, mixed, frigid	Typic Haplorthods	Spodosol

14

Colton-Adams-Histosol

- Croghan
- Duane
- Machias
- Madawosksa
- Allagash

15

Lyman-AuGres-Histosol

- Adams
- Croghan
- Buxton
- Saugatuck
- Scantic
- Biddeford

MAINE

Parent material of the soil catena and selected characteristics of the deepest, best drained member.	Excessively Drained	Somewhat Excessively Drained	Well Drained	Moderately Well Drained	Somewhat Poorly Drained	Poorly Drained	Very Poorly Drained
Soils from coarse watersorted material of glacial outwash deltas, terraces and beaches							
1. Granite, gneiss and some sandstone							
a. sandy-skeletal gravelly soils	Colton			Duane	AuGres		Scarboro
b. sandy soils	Adams			Croghan	Saugatuck	→	Scarboro
c. sandy soils with cemented spodic horizon							
2. Slate, shale, and phyllite and lesser amounts of granite, gneiss, and limestone							
a. sandy-skeletal gravelly soils							
1. > 42 cm of coarse loamy cap		Stetson		Machias	Fredon	→	Halsey
2. < 42 cm of coarse loamy cap		Masardis					
b. fine sandy loam			Allagash	Madawaska	Red Hook	Atherton	→
c. sandy soils				Skowhegon	→		

MASSACHUSETTS

Land Resource	Soil Association	CEC	Suscept. Level	Assoc. Suscept. Rating
	1. Nassau-	*	SS	NS
	Bernardston-	*	NS	
	Pittstown	*	NS	
	2. Amenia-	18.1	NS	NS
	Pittsfield-	12.8	SS	
	Stockbridge	15.1	NS	
	3. Lyman-	*	SS	NS
	Marlow-	27.1	NS	
	Peru	20.9	NS	
	4. Westminster-	22.7	NS	NS
	Buckland-	*	NS	
	Colrain	14.0	SS	
	5. Paxton-	21.8	NS	SS2
	Hollis-	*	SS	
	Canton	*	SS	
	6. Holyoke-	*	NS	NS
	Hollis-	*	SS	
	Wethersfield	*	NS	
	7. Hinckley-	7.4	SS	SS1
	Wethersfield-	*	NS	
	Windsor	6.0	S	
	8. Hadley-	11.8	SS	NS
	Winooski-	19.6	NS	
	Limerick	*	NS	
	9. Hinckley-	7.4	SS	SS1
	Windsor-	6.0	S	
	Muck	*	NS	
	10. Windsor-	6.0	S	NS
	Pollux-	*	NS	
	Amostown	*	NS	
	11. Scituate-	17.0	NS	SS2
	Essex-	13.2	SS	
	Ridgebury	14.6	SS	
	12. Gloucester-	12.1	SS	SS2
	Peat-	*	NS	
	Hinckley	7.4	SS	

13. Hinckley-	7.6	SS	
Canton-	*	SS	SS2
Muck	*	NS	
14. Canton-	*	SS	
Paxton-	18.0	NS	NS
Merrimac	41.o	NS	
15. Scantic-	*	NS	
Hollis-	*	SS	NS
Biddeford	*	NS	
16. Canton-	*	SS	
Plymouth-	*	S	SS1
Carver	8.7	SS	
17. Carver-	8.7	SS	
Muck-	*	NS	SS2
Hinckley	7.6	SS	
18. Dukes-	2.4	S	
Carver-	8.7	SS	SS1
Tidal marsh	*	NS	
19. Evesboro-	3.8	S	
Riverhead-	*	SS	SS1
Katama	*	SS	
20. Dune land-	*	SS	
Tidal marsh-	*	NS	NS
Coastal beach	*	NS	
21. Plymouth-	*	S	
Chilmark-	*	NS	SS1
Nantucket	*	SS	
22. Millis-	*	SS	
Whitman-	*	NS	NS
Scituate	17.0	NS	

MICHIGAN

Southern Peninsula

Land Resource	Soil Association	CEC	Suscept. Level	Assoc. Suscept. Rating
1. Parent drift, clays, surface horizons are silt loam and loam, well drained and intermediate drainage.	1. Napanee-	28.1	NS	NS
	St. Clair (Miami)	*	NS	
	Conover	*	NS	
	2. Miami-	17.0	NS	NS
	Napanee-	28.1	NS	
	Conover	*	NS	
	3. Kent-	*	NS	NS
	Allendale-	*	NS	
	Isabella	*	SS	
	4. Isabella-	*	SS	SS2
	Montcalm-	*	SS	
	Kent	*	NS	
	5. Nester-	*	NS	NS
	Iosco-	*	NS	
	Emmet	5.0	S	
	6. Selkirk-	*	NS	NS
	Ogemaw-	*	NS	
	Bergland	*	NS	
	7. St. Clair (Napanee)	*	NS	NS
	Miami-	17.0	NS	
	Hillsdale-	*	NS	
	Allendale	*	NS	
2. Loams, parent drift-clay, or coarse previous well drained.	8. Miami-	17.0	NS	NS
	Hillsdale-	*	NS	
	Conover	*	NS	
	9. Onaway-	15.1	NS	NS
	Emmet	5.0	S	
	10. Onaway-	15.1	NS	NS
	Posen-	-	-	
	Longrie	*	NS	
3. Sandy loams, loams, parent drift-sandy clay.	11. Hillsdale-	*	NS	NS
	Miami-	17.0	NS	
	Bellefontaine	-	-	

MICHIGAN

Southern Peninsula

	12. Bellefontaine-	*	-	NS
	Hillsdale-	*	NS	
	Coloma	*	SS	
	13. Montcalm-	*	SS	SS1
	Coloma-	*	SS	
	Isabella	*	SS	
	14. Emmet-	5.0	S	SS1
	Roselawn	*	-	
	15. Montcalm-	*	SS	SS1
	Isabella	*	SS	
	16. Emmet-	5.0	S	SS2
	Onaway-	15.1	NS	
	Ogemaw-	*	NS	
	Kalkaska	*	SS	
4. Sandy loams, plains, sands or sandgravel substratum.	17. Fox-	14.2	SS	SS1
	Osthemo-	6.3	SS	
	Plainfield	5.5	S	
	18. Fox-	14.2	SS	SS2
	Plainfield-	5.5	S	
	Hillsdale-	*	NS	
	Bellefontaine	-	-	
	19. Ogemaw-	*	NS	NS
	Rubicon-	*	SS	
	Nester	*	NS	
	20. Warsaw	25.9	NS	NS
5. Fine sands, silts, clay plains dry and wet.	21. Bohemian-	*	SS	SS2
	Selkirk	*	NS	
	22. Berrien-			NS
	Plainfield-	5.5	S	
	Allendale-	*	NS	
	Wauseon-	*	NS	
	Granby	*	NS	
	23. Berrien-			NS
	Tuscola-	*	NS	
	Lacota-	*	NS	
	Brookston	31.3	NS	
6. Sands, Hilly land	24. Coloma-	*	SS	SS1
	Hillsdale-	*	NS	
	Bellefontaine	-	-	

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Southern Peninsula

	25. Roselawn- Emmet- Rubicon	- 5.0 *	- S SS	SS1
	26. Wexford Emmet- Kalkaska	* 5.0 *	- S SS	SS1
	27. Coloma- Montcalm	* *	SS SS	SS1
7. Sands, dry plains	28. Plainfield-	5.5	S	S1
	29. Kalkaska- Rubicon	* *	SS SS	SS1
	30. Grayling- Rubicon	* *	SS SS	SS1
8. Sand dunes	31. Bridgman (Dunes)			
9. Intermediate drainage loams, silt loams-underlaid by till clay.	32. Conover- Hillsdale- Miami	* * 17.0	NS NS NS	NS
	33. Conover- Miami- Brookston	* 17.0 31.3	NS NS NS	NS
	34. Coldwater- Conover- Brookston	 * 31.3	 NS NS	
	35. Crosby- Conover- Miami	20.3 * 17.0	NS NS NS	NS
	36. Isabella- Conover- Allendale	* * *	SS NS NS	NS
10. Wetland, clays, loams, silt loams, underlaid by clay.	37. Bergland- Munuscong- Selkirk	* * *	NS NS NS	NS
	38. Brookston	31.3	NS	NS
	39. Thomas Wisner- Bono- Toledo	* * * *	NS NS NS NS	NS
	40. Macomb- Brookston	* 31.3	NS NS	NS

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11. Intermediate drainage, loams, silt loams, clay, sandy loam, lake-bed plains	41. Conover-	*	NS	NS
	Napanee-	28.1	NS	
	Brookston	31.3	NS	
	42. Kawkawlin-	*	NS	NS
	Conover-	*	NS	
	Brookston	31.3	NS	
12. Wet land Sandy loams	43. Munuscong-	*	NS	NS
	Detour-	*	NS	
	Alpena-	*	SS	
	Rubicon	*	SS	
	44. Brady-	*	NS	SS2
	Gilford-	*	NS	
	Fox-	14.2	SS	
	Plainfield	5.5	S	
	45. Macomb-	*	NS	NS
	Allendale-	*	NS	
	Berrien	*	-	
	46. Munuscong-	*	NS	NS
	Ogemaw-	*	NS	
	Bergland	*	NS	
	47. Bruce-	*	NS	NS
	Brimley-	*	NS	
	Munuscong-	*	NS	
	Selkirk	*	NS	
	48. Alluvial Soils-	*	-	NS
	Undifferentiated	*	-	
13. Wet land Sands	49. Saugatuck-	*	NS	NS
	Plainfield-	5.5	S	
	Newton-	*	NS	
	Weare-	*	-	
	Wallace	*	SS	
	50. Newton-	*	NS	NS
	Saugatuck-	*	NS	
	Rubicon	*	SS	
	51. Colwood-	*	NS	NS
	Wauseon-	*	NS	
	Berrien	*	-	
	52. Newton-	*	NS	NS
	Granby-	*	NS	
	Maumee-	15.5	NS	
	Plainfield-	5.5	S	
	Lacota	*	NS	

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Southern Peninsula

	53. Newton-	*	NS	NS
	Saugatuck-	*	NS	
	Munuscong-	*	NS	
	Bergland-	*	NS	
	Rifle Peat	*	NS	
	54. Eastport	*	SS	SS1
	55. Eastport (Stony and bedrock land)	*	SS	SS1
14. Peats, Mucks	56. Carlisle-	*	NS	NS
	Rifle	*	NS	
	57. Rifle-	*	NS	NS
	Carbondale-	*	NS	
	Greenwood	*	NS	

Northern Peninsula

15. Silt Clay Well drained and intermediate drainage	58. Ontonagon-	*	NS	NS
	Watton-	*	NS	
	Bohemian-	*	SS	
	Au Train	*	-	
	59. Ontonagon-	*	NS	NS
	Bergland	*	NS	
16. Well drained (Including variable amounts of wet land), Loams, Silt loams, (Subsurface drift sand, clay, rock meal, and coarse detritus.)	60. Onaway-	15.1	NS	NS
	Posen-	*	-	
	Emmet	5.0	S	
	61. Onaway-	15.1	NS	NS
	Trenary-	*	SS	
	Angelica-	*	NS	
	Carbondale	*	NS	
	62. Munising-	*	SS	SS2
	Skanee-	*	NS	
	Onota-	*	SS	
	Strongs	*	-	
	63. Iron River-	*	NS	NS
	Gogebic-	*	NS	
	Ahmeek	*	NS	
	64. Iron River-	*	NS	NS
	Skanee-	*	NS	
	Adolph-	36.7	NS	
	Watton	*	NS	

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	65.	Kennan-	*	NS	
		Iron River	*	NS	
		Gaastra-	*	NS	
		Stambaugh	*	SS	
	66.	Baraga-	*	SS	SS2
		Champion-	*	SS	
		Kennan-	*	NS	
		Iron River	*	NS	
	67.	Iron River-	*	NS	SS2
		Goebic-	*	NS	
		Amasa-	*	SS	
		Stambaugh	*	SS	
	68.	Onaway-	15.1	NS	SS2
		Emmet-	5.0	S	
		Trenary	*	SS	
17. Sandy loam, Loams, Sands, Naturally Well-drained.	69.	Munising-	*	SS	SS1
		Trenary	*	SS	
	70.	Munising-	*	SS	SS2
		Hiawatha	*	-	
	71.	Gogebic-	*	NS	NS
		Hiawatha-	*	-	
		Vilas-	*	SS	
		Iron River	*	NS	
	72.	Blue Lake-	*	SS	SS1
		Kalkaska-	*	SS	
		Trenary	*	SS	
	73.	Hiawatha-	*	-	SS2
		Munising-	*	SS	
		Champion	*	SS	
		Baraga	*	SS	
	74.	Trenary-	*	SS	SS2
		Gogebic-	*	NS	
		Hiawatha-	*	-	
		Vilas	*	SS	
	75.	Emmet-	5.0	S	SS2
		Onaway-	15.1	NS	
		Roselawn	-	-	

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Northern Peninsula

18. Sand, Sandy loams Hill land.	76. Vilas-	*	SS	SS2
	Hiawatha-	*	-	
	Gogebic-	*	NS	
	Rubicon	*	SS	
	77. Hiawatha-	*	-	SS2
	Munising	*	SS	
19. Silt and Sands	78. Stambaugh-	*	SS	SS1
	Rubicon-	*	SS	
	Allouez	*	SS	
20. Sands, Sandy Loams, Plains, Benches, Well-drained.	79. Strongs-	*	-	NS
	Au Train	*	-	
	80. Strongs-	*	-	SS2
	Munising-	*	SS	
	Au Train-	*	-	
	Allouez	*	SS	
	81. Kalkaska	*	SS	SS1
	82. Au Train-	*	-	SS2
	Rubicon	*	SS	
	83. Menominee-	*	SS	SS2
	Ingalls-	*	NS	
	Bohemian	*	SS	
21. Sands, Silt, Clay	84. Bohemian-	*	-	SS2
	Au Train-	*	-	
	Rubicon	*	SS	
22. Sands, Driest Sites	85. Rubicon-	*	SS	SS1
	Omega-	9.7	SS	
	Onomia	7.0	SS	
	86. Rubicon-	*	SS	SS1
	Grayling	*	SS	
23. Dunes	87. Sauble-	*	-	SS2
	Deer Park-	*	SS	
	Bridgman	*	-	
24. Rock Land (Igneous and metamorphic rocks), Hill, Mountainous Topography	88. Iron River-	*	NS	NS
	Gogebic-	*	NS	
	Vilas (Rock Knob highland)	*	SS	
	89. Champion-	*	SS	SS1
	Baraga (Mountainous land)	*	SS	

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Northern Peninsula

	90. Munising-	*	SS	SS2
	Hiawatha-	*	-	
	Vilas (Mountainous land)	*	SS	
	91. Iron River-	*	NS	NS
	Watton-	*	NS	
	Ontonagon (Copper Range highland)	*	NS	
	92. Munising-	*	SS	SS2
	Stongs-	*	-	
	Allouez-	*	SS	
	Ahmeek (Keewenaw Highland and Isle Royale)	*	NS	
	93. Iron River-	*	NS	NS
	Gogebic (Porcupine Mountains)	*	NS	
	94. Iron River-	*	NS	NS
	Gogebic (Granite Knob and swampland)	*	NS	
25. Mixed dry and wet.	95. Onota-	*	SS	SS1
	Munising	*	SS	
	96. Chatam-	*	SS	SS1
	Longrie-	*	SS	
	Alpena-	*	SS	
	Ruse	*	NS	
26. Limestone and Sandstone bed rock (Rock at shallow depths; variable textures in soils)	97. Gilchrist-	*	SS	SS1
	Longrie-	*	SS	
	Blue Lake-	*	SS	
	Onaway	15.1	NS	
27. Loams, Clay	98. Detour-	*	NS	NS
	Johnswood-	*	NS	
	Onaway-	15.1	NS	
	Ontonagon-	*	NS	
	Carbondale	*	NS	
	99. Trenary-	*	SS	SS1
	Blue Lake-	*	SS	
	Ogemaw-	*	NS	
	Longrie-	*	SS	
	Carbondale Muck	*	NS	
	100. Munising-	*	SS	NS
	Ontonagon-	*	NS	
	Bergland-	*	NS	
	Munuscong Types (Sugar-Neebish Islands)	*	NS	

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28. Wet land, Loams, Silts, Sandy loams.	101. Bruce-	*	NS	NS
	Brimley-	*	NS	
	Munuscong-	*	NS	
	Ontonagon	*	NS	
	102. Skanee-	*	NS	NS
	Munising	*	SS	
	103. Ewen and Pelkie (Alluvial Soils)	*	-	NS
29. Wet land, Clay	104. Bergland-	*	NS	NS
	Munuscong-	*	NS	
	Ontonagon	*	NS	
	105. Angelica-	*	NS	NS
	Trenary-	*	SS	
	Onaway-	15.1	NS	
	Carbondale	*	NS	
30. Wet land sands	106. Eastport-	*	SS	SS1
	Shelldrake (Coastal lowland complex)	*	SS	
	107. Newton-	*	NS	NS
	Saugatuck	*	NS	
	Rubicon	*	SS	
31. Sands (Wet and Dry) Peats	108. Newton	*	SS	SS2
	Saugatuck-	*	NS	
	Rubicon-	*	SS	
	Wallace-	*	SS	
	Greenwood-	*	NS	
	Houghton Peats	*	NS	
32. Peats Mucks	109. Peats and Mucks	*	NS	NS

MISSISSIPPI

Land Resource	Soil Association	CEC	Suscept. Level	Assoc. Suscept. Rating
A. Alfisols				
1. Wet soils	1. Guyton-	*	NS	NS
	Rosella-	*	NS	
	Bassfield	*	SS	
	2. Dundee-	16.7	NS	NS
	Dubbs	17.1	NS	
	3. Dundee-	16.7	NS	NS
	Forestdale-	*	NS	
	Dubbs	17.1	NS	
	4. Forestdale-	*	NS	NS
	Alligator	52.6	NS	
2. Moist soils	5. Loring-	12.2	SS	SS1
	Grenada-	11.5	SS	
	Falaya	13.4	SS	
	6. Loring-	12.2	SS	SS1
	Smithdale-	*	SS	
	Providence	11.0	SS	
	7. Providence-	11.0	SS	SS1
	Bude	9.7	SS	
	8. Providence-	11.0	SS	SS2
	Ora-	6.4	SS	
	Arkabutla	*	NS	
	9. Providence-	11.0	SS	SS1
	Ruston-	5.7	S	
	Bude	9.7	SS	
	10. Dubbs-	17.1	NS	NS
	Dundee	16.7	NS	
	11. Kipling-	*	NS	NS
	Leeper-	*	NS	
	Eutaw	41.4	NS	
	12. Kipling-	*	NS	NS
	Savannah-	8.0	SS	
	Oktibbeha	*	NS	

	13. Longview-	*	NS	NS
	Savannah-	8.0	SS	
	Falkner	16.7	NS	
	14. Memphis-	13.1	SS	SS1
	Loring-	12.2	SS	
	Matchez	*	SS	
	15. Oktibbeha-	*	NS	NS
	Ora	6.4	SS	
	16. Vaiden-	38.7	NS	NS
	Eutaw-	41.1	NS	
	Sumter	*	NS	
	17. Wilcox-	28.6	NS	NS
	Falkner-	16.7	NS	
	Mayhew	*	NS	
	18. Falkner-	16.7	NS	NS
	Adaton-	*	NS	
	Mayhew	*	NS	
	19. Freestone-	*	NS	NS
	Cadeville	*	NS	
	Susquehanna	*	NS	
	20. Susquehanna-	*	NS	NS
	Benndale	*	SS	
B. Entisols				
1. Wet soils	21. Arkabutla-	*	NS	NS
	Rosebloom-	*	NS	
	Urbo	*	NS	
	22. Arkabutla-	*	NS	NS
	Rosebloom-	*	NS	
	Velda	*	SS	
	23. Commerce-	*	NS	NS
	Robinsonville-	*	SS	
	Crevasse, frequently flooded	*	NS	
	24. Commerce-	*	NS	NS
	Tunica-	*	NS	
	Bowdre	*	NS	
	25. Falaya-	13.4	SS	SS2
	Collins-	10.5	SS	
	Waverly	*	NS	
	26. Gillsburg-	*	NS	NS
	Ariel-	*	SS	
	Arkabutla	*	NS	

MISSISSIPPI

	27. Mantachie-	*	NS	NS
	Cahaba-	*	SS	
	Myatt	*	NS	
	28. Rosebloom-	*	NS	NS
	Gillsburg-	*	NS	
	Ariel	*	SS	
2. Moist soils	29. Nugent-	*	SS	NS
	Harleston-	*	NS	
	Smithton	*	NS	
	30. Morganfield-	*	SS	SS2
	Adler	*	NS	
C. Histosols	31. Handsboro-	*	NS	NS
	Tidal Marsh	*	NS	
D. Inceptisols				
1. Wet soils	32. Alligator	52.6	NS	NS
	33. Alligator-	52.6	NS	NS
	Forestdale	*	NS	
	34. Leeper-	*	NS	NS
	Catalpa	*	NS	
	35. Sharkey	43.8	NS	NS
	36. Sharkey-	43.8	NS	NS
	Alligator	52.6	NS	
	37. Sharkey-	43.8	NS	NS
	Commerce, frequently flooded	*	NS	
	38. Sharkey-	43.8	NS	NS
	Tunica	*	NS	
2. Moist soils	39. Jena-	*	SS	NS
	Mantachie-	*	NS	
	Kirkville	*	NS	
E. Ultisols				
1. Wet soils	40. Leaf-	15.9	NS	NS
	Lenoir	*	NS	
	41. Atmore-	*	NS	NS
	Harleston-	*	NS	
	Plummer	*	NS	
				NS
	42. Trebloc	*	NS	NS
	Mantachie-	*	NS	
	Latonia	*	SS	

MISSISSIPPI

2. Moist soils	43.	Prentiss-	5.4	S	
		Cahaba-	*	SS	SS1
		Stough	8.1	SS	
	44.	Savannah-	8.0	SS	
		Ora-	6.4	SS	SS1
		Stough	8.1	SS	
	45.	Savannah-	8.0	SS	
		Susquehanna-	*	NS	NS
		Falkner	16.7	NS	
	46.	Lauderdale-	*	SS	
		Arundel-	*	SS	SS1
		Sweatman	*	SS	
	47.	Latonia-	*	SS	
		Alaga-	*	SS	SS2
		Bibb	*	NS	
	48.	Sweatman-	*	SS	SS2
		Boswell	*	NS	
	49.	Eustis-	4.8	S	
		Latonia-	*	SS	S2
		Lakeland-	2.8	S	
	50.	Harleston-	*	NS	
		Lenoir-	*	NS	NS
		Atmore	*	NS	
	51.	McLaurin-	*	SS	
		Benndale-	*	SS	SS1
		Lucedale	*	SS	
	52.	McLaurin-	*	SS	
		Lucy-	3.4	S	SS1
		Troup	*	SS	
	53.	McLaurin-	*	SS	
		Prentiss-	5.4	S	SS2
		Freestone	*	NS	
	54.	McLaurin-	*	SS	
		Ruston-	5.7	S	SS1
		Saucier	*	NS	
	55.	McLaurin-	*	SS	
		Susquehanna-	*	NS	SS2
		Alaga	*	SS	
	56.	McLaurin-	*	SS	SS1
		Sweatman	*	SS	

MISSISSIPPI

	57.	Poarch-	*	SS	NS
		Atmore-	*	NS	
		Harleston	*	NS	
	58.	Ruston-	5.7	S	SS1
		Malbis-	*	SS	
		Susquehanna	*	NS	
	59.	Ruston-	5.7	S	SS1
		Ora-	6.4	SS	
		Smithdale	*	SS	
	60.	Saucier-	*	NS	NS
		Poarch-	*	SS	
		Atmore	*	NS	
	61.	Smithdale-	*	SS	SS2
		Atwood	*	NS	
	62.	Smithdale-	*	SS	NS
		Cadeville-	*	NS	
		Lexington	*	NS	
	63.	Smithdale-	*	SS	SS2
		Cadeville-	*	NS	
		Providence	11.0	SS	
	64.	Smithdale-	*	SS	SS2
		Lexington-	*	NS	
		Providence	11.0	SS	
	65.	Smithdale-	*	SS	SS2
		Susquehanna	*	NS	
	66.	Smithdale-	*	SS	SS1
		Sweatman-	*	SS	
		Ora	6.4	SS	
	67.	Smithdale-	*	SS	SS1
		Sweatman-	*	SS	
		Providence	11.0	SS	
	68.	Smithdale-	*	SS	SS1
		Sweatman-	*	SS	
		Saffell	*	SS	
F. Vertisols	69.	Okolona-	*	NS	NS
		Vaiden-	*	NS	
		Leeper	*	NS	

NEW JERSEY

Land Resources	Soil Association	CEC	Suscept. Level	Assoc. Suscept. Rating
	1. Penn-	11.3	SS	SS1
	Klinesville	*	SS	
	2. Norton-	*	SS	SS1
	Penn	11.3	SS	
	3. Pattenburg-	*	NS	NS
	Arendtsville	*	NS	
	4. Edneyville-	*	NS	NS
	Parker	*	SS	
	5. Parsippany-	*	NS	NS
	Landsdowne-	*	-	
	Whippany	*	NS	
	6. Washington	*	SS	NS
	Wassaic-	*	NS	
	Bartley	*	NS	
	7. Rownland-	*	-	NS
	Birdsboro	*	NS	
	8. Dunellen-	*	SS	SS2
	Ellington	*	NS	
	9. Hazen-	*	NS	NS
	Riverhead-	*	SS	
	Urban land	*	NS	
	10. Carlisle-	*	NS	NS
	Swamp	*	NS	
	11. Annandale-	*	NS	NS
	Califon-	*	NS	
	Washington	*	SS	
	12. Swartswood-	*	SS	SS1
	Nassau-	*	SS	
	Wurtsboro	*	SS	
	13. Oquaga-	*	NS	SS2
	Rock outcrop-	*	SS	
	Swartswood	*	SS	

NEW JERSEY

14. Nassau-	*	SS	SS2
Bath	17.8	NS	
15. Rockaway-	*	SS	SS2
Hibernia	*	NS	
16. Rockaway-	*	SS	SS1
Rock Outcrop	*	SS	
17. Boonton-	*	NS	NS
Haledone	*	NS	
18. Holyoke-	*	NS	NS
Rock Outcrop	*	SS	
19. Nixon	*	NS	NS
20. Neshaminy-	14.6	SS	SS2
Mount Lucas	*	NS	
21. Chalfont-	*	NS	NS
Quakertown-	*	NS	
Hazelton-	8.4	SS	
Lehigh	*	NS	
22. Penn-	11.3	SS	NS
Bucks-	*	NS	
Reaville	*	NS	
23. Rownland-	*	-	NS
Birdsboro	*	NS	
24. Metapeake-	14.8	SS	SS1
Mattapex-	12.3	SS	
Chillum	*	SS	
25. Galestown-	*	SS	SS1
Downer-	6.9	SS	
Klej-	*	NS	
Evesboro	3.8	S	
26. Alluvial land-	*	NS	NS
Shrewsbury-	*	NS	
Pocomoke	*	NS	
27. Aura-	6.3	SS	SS1
Sassafras-	6.4	SS	
Downer	6.9	SS	
28. Keyport-	*	NS	NS
Elkton	*	NS	
29. Freehold-	13.6	SS	NS
Collington-	17.1	NS	
Holmdel	*	NS	

NEW JERSEY

30. Downer-	6.9	SS	SS1
Sassafras-	6.4	SS	
Hammonton	7.1	SS	
31. Marlton-	*	NS	NS
Kresson-	*	NS	
Colemantown	*	NS	
32. Westphalia-	4.3	S	S2
Nixonton	*	SS	
33. Lakewood-	*	SS	SS1
Lakehurst-	*	NS	
Evesboro	3.8	S	
34. Woodmansie-	*	SS	SS2
Lakehurst-	*	NS	
Downer	6.9	SS	
35. Muck-	*	NS	NS
Atsion-	*	NS	
Pocomoke	*	NS	
36. Tidal Marsh	*	NS	NS
37. Hammonton-	7.1	SS	SS1
Woodstown-	8.9	SS	
Sassafras	6.4	SS	
38. Coastal Beach-	*	NS	NS
Urban land	*	NS	

NEW YORK

Land Resources	Soil Association	CEC	Suscept. Level	Assoc. Suscept. Rating
1. Glacial Till A. Hapludalfs dominant	1. Cazenovia- Mohawk	* *	NS NS	NS
	2. Hilton	14.9	SS	NS
	3. Honeoye	*	NS	NS
	4. Lansing	15.6	NS	NS
	5. Madrid	*	NS	NS
	6. Ontario	*	NS	NS
Aw. Ochradalfs dominant	7. Appleton	*	NS	NS
	8. Burdett- Darien	* *	NS NS	NS
	9. Ovid	*	NS	NS
B. Fragiudalfs dominant	10. Langford	19.82	NS	NS
Bw. Fragiaqualfs dominant	11. Erie	*	NS	NS
C. Eutrothrepts dominant	12. Nellis	*	NS	NS
	13. Farmington	*	NS	NS
	14. Hogansburg- Swanton	* *	NS NS	NS
	15. Pittsfield- Rhinebeck	12.8 *	SS NS	SS2
D. Dystrochrepts dominant	16. Charlton	14.3	SS	SS1
	17. Muskingum	8.1	SS	NS$^+$
	18. Lordstown- Mardin	* 23.7	NS NS	NS
	19. Hollis	*	SS	SS1

	20. Lordstown-	*	NS	NS
	Oquaga	*	NS	
	21 Nassau	*	SS	SS1
	22. Charlton-	14.3	SS	SS1
	Paxton	20.2	NS	
	Essex (very stony)	13.2	SS	
Dw. Haplaquepts dominant	23. Fremont-	*	NS	NS
	Hornell	*	NS	
E. Fragiochrepts dominant	24. Bath	17.8	NS	NS
	25. Ira	*	NS	NS
	26. Lackawanna	25.2	NS	NS
	27. Mardin	23.7	NS	NS
	28. Sodus	15.3	NS	NS
	29. Bernardston-	*	NS	SS2
	Nassau	*	SS	
	30. Bernardston-	*	NS	SS2
	Hoosic	*	SS	
	31. Lackawanna-	25.2	NS	NS
	Wurtsboro (very stony)	*	NS	
Ew. Fragiquods and frigid Fragiaquepts dominant	32. Mosherville	*	NS	NS
	33. Volusia	*	NS	NS
F. Haplorthods, Fragiorthods or very stony Fragiaquods dominant	34. Empeyville	29.4	NS	NS
	35. Becket-	*	NS	NS
	Berkshire-	*	NS	
	Potsdam (very stony)	23.6	NS	
	36. Westbury-	*	NS	NS
	Coveytown (very stony)	*	NS	
	37. Worth (very stony)	*	NS	NS
Fw. Fragiaquods and frigid Fragiaquepts dominant	38. Camroden	45.5	NS	NS
	39. Westbury-	*	NS	NS
	Brayton	*	NS	

NEW YORK

2. Glacial Outwash and Deltiac Sand				
G. Dystrochrepts dominant	40. Chenango-	17.9	NS	NS
	Blasdell	*	NS	
	41. Haven-	*	NS	SS2
	Riverhead	*	SS	
	42. Chenango-	17.9	NS	SS2
	Valois	*	NS	
	Howard-	*	SS	
	Madrid	*	SS	
Gd. Udipsamments, sandy skeletal Dystrochrepts or loamy skeletal Eutrochrepts dominant	43. Alton-	*	NS	SS2
	Hoosic	*	SS	
	44. Colonie-	9.9	SS	S2
	Plymouth-	*	S	
	Windsor	*	S	
	45. Plymouth-	*	S	S1
	Montauk	*	S	
Gw. Psammaquents or Haplaquepts dominant	46. Minoa-	*	SS	SS1
	Stafford	*	S	
H. Hapludolfs dominant	47. Arkport	10.6	SS	SS1
	48. Howard	*	NS	NS
	49. Palmyra	*	NS	NS
Kd. Haplorthods dominant	50. Colton-	*	SS	SS1
	Adams	*	SS	
Kw. Haploquods dominant	51. Naumburg	*	S	S1
3. Lake and Marine Sediments	52. Collamer	*	NS	NS
	53. Schoharie	*	NS	NS
L. Hapludolfs or silty Fragiochrepts dominant	54. Williamson-	17.5	NS	NS
	Ira	*	NS	
	55. Hudson	*	NS	NS
Lw. Ochradalfs or Haplaquepts dominant	56. Canandaigua	*	NS	NS
	57. Kingsbury	*	NS	NS
	58. Niagara	19.94	NS	NS

NEW YORK

2. Glacial Outwash and Deltiac Sand				
G. Dystrochrepts dominant	40. Chenango-	17.9	NS	NS
	Blasdell	*	NS	
	41. Haven-	*	NS	SS2
	Riverhead	*	SS	
	42. Chenango-	17.9	NS	SS2
	Valois	*	NS	
	Howard-	*	SS	
	Madrid	*	SS	
Gd. Udipsamments, sandy skeletal Dystrochrepts or loamy skeletal Eutrochrepts dominant	43. Alton-	*	NS	SS2
	Hoosic	*	SS	
	44. Colonie-	9.9	SS	S2
	Plymouth-	*	S	
	Windsor	*	S	
	45. Plymouth-	*	S	S1
	Montauk	*	S	
Gw. Psammaquents or Haplaquepts dominant	46. Minoa-	*	SS	SS1
	Stafford	*	S	
H. Hapludolfs dominant	47. Arkport	10.6	SS	SS1
	48. Howard	*	NS	NS
	49. Palmyra	*	NS	NS
Kd. Haplorthods dominant	50. Colton-	*	SS	SS1
	Adams	*	SS	
Kw. Haploquods dominant	51. Naumburg	*	S	S1
3. Lake and Marine Sediments	52. Collamer	*	NS	NS
	53. Schoharie	*	NS	NS
L. Hapludolfs or silty Fragiochrepts dominant	54. Williamson-	17.5	NS	NS
	Ira	*	NS	
	55. Hudson	*	NS	NS
Lw. Ochradalfs or Haplaquepts dominant	56. Canandaigua	*	NS	NS
	57. Kingsbury	*	NS	NS
	58. Niagara	19.94	NS	NS

	59. Odessa-	*	NS	NS
	Rhinebeck	*	NS	
	60. Swanton-	*	NS	NS
	Rhinebeck	*	NS	
	61. Kingsbury-	*	NS	NS
	Hogansburg	*	NS	
	62. Kingsbury-	*	NS	NS
	Rock outcrop	*	SS	
4. Organic Deposits				
M. Histosols dominant	63. Carlisle-	*	NS	NS
	Palms	*	NS	
5. Misc. Units				
R. Rock outcrop dominant	64. Rock Outcrop (sloping)	*	SS	SS1
	65. Rock Outcrop (steep)	*	SS	SS1
U. Unclassified Soil	66. Beach-	*	NS	NS
	Tidal Marsh	*	NS	
	67. Urban Land	*	NS	NS

* No CEC available

o Bottomland

+ Lime influenced

NORTH CAROLINA

Land Resource	Soil Association	CEC	Suscept. Level	Assoc. Suscept. Rating
1. Blue Ridge Mountains	1. Ashe-	*	SS	SS1
	Evard	*	SS	
	2. Porters-	*	SS	SS1
	Edneyville	*	SS	
	3. Ports-	*	SS	SS1
	Ashe	*	SS	
	4. Talledega-	*	SS	SS1
	Saluda-	*	SS	
	Sylco	*	SS	
	5. Hayesville-	6.6	SS	SS1
	Fannin	*	SS	
	6. Hayesville-	6.6	SS	SS1
	Clifton-	*	SS	
	Rabun	*	SS	
	7. Hayesville-	6.6	SS	SS1
	Saluda	*	SS	
2. Southern Piedmont	8. Enon-	*	SS	SS2
	Wilkes	*	NS	
	9. Mecklenburg-	*	NS	NS
	Iredell	*	NS	
	10. Wilkes-	*	NS	NS
	Helena	*	NS	
	11. White Store-	*	NS	NS
	Creedmoor	*	NS	
	12. Mayodan	*	SS	SS2
	Creedmoor	*	NS	
	13. Cecil-	8.4	SS	SS1
	Appling-	*	SS	
	Pacolet	*	SS	
	14. Appling-	*	SS	SS1
	Durham-	*	SS	
	Vance	*	SS	
	15. Georgeville-	*	SS	SS1
	Herndon	*	SS	

NORTH CAROLINA

	16. Wedowee-	*	SS	SS1
	Durham-	*	SS	
	Louisburg	*	SS	
	17. Davidson-	*	SS	SS1
	Hiwassee	*	SS	
	18. Pacolet-	*	SS	SS1
	Rock land	*	SS	
	19. Davidson-	*	SS	SS1
	Enon	*	SS	
	20. Helena	*	NS	NS
	Vance	*	SS	
	21. Nason-	*	SS	SS1
	Tatum	*	SS	
	22. Nason-	*	SS	SS2
	Goldston-	*	SS	
	Lignum	*	NS	
	23. Pacolet-	*	SS	SS1
	Madison-	*	SS	
	Hiwassee	*	SS	
	24. Lockhart	*	SS	SS1
	25. Appling-	*	SS	SS1
	Wedowee-	*	SS	
	Louisburg	*	SS	
3. Southern Coastal Plain	26. Lakeland-	2.4	S	SS1
	Gilead-	*	SS	
	Blaney	*	SS	
	27. Lakeland-	2.4	S	S2
	Norfolk-	3.9	S	
	Wagram	*	SS	
	28. Norfolk-	3.9	S	S1
	Lakeland	2.4	S	
	29. Norfolk	3.9	S	S1
	30. Norfolk-	3.9	S	S1
	Lynchburg	6.0	S	
	31. Aycock-	*	SS	SS1
	Marlboro	4.6	S	

	32.	Norfolk-	3.9	S	S2
		Goldsboro-	12.3	SS	
		Marlboro	4.6	S	
	33.	Marlboro-	4.6	S	S1
		Norfolk	3.9	S	
	34.	Aycock-	*	SS	SS1
		Marlboro-	4.6	S	
		Nahunta	*	NS	
	35.	Norfolk-	3.9	S	S2
		Wagram	*	SS	
	36.	Goldsboro-	12.3	SS	SS1
		Lynchburg	6.0	S	
	37.	Norfolk-	3.9	S	S2
		Goldsboro	12.3	SS	
	38.	Roanoke-	*	NS	NS
		Wahee-	*	NS	
		Wickham	*	SS	
	39.	Wickham-	*	SS	SS2
		Altavista	*	NS	
	40.	Pactolus-	*	NS	NS
		Johnston	*	NS	
4. Atlantic Coast Flatwoods	41.	Ponzer-	*	NS	NS
		Pamlico-	*	SS	
		Dorovan	*	NS	
	42.	Capers-	*	NS	NS
		Newhan	*	SS	
	43.	Chipley-	*	NS	NS
		Lynn Haven-	*	NS	
		Leon	*	NS	
	44.	Wehadkee-	*	NS	NS
		Roanoake	*	NS	
	45.	Chewacla-	*	NS	NS
		Wehadkee	*	NS	
	46.	Lakeland-	2.4	S	S2
		Kenansville	*	SS	
	47.	Lakeland-	2.4	S	SS1
		Pactolus	*	NS	

NORTH CAROLINA

48.	Lakeland-	2.4	S	NS
	Bertie	*	NS	
	Dragston	*	NS	
49.	Weeksville-	*	NS	NS
	Pasquotank	*	NS	
50.	Bladen-	11.0	SS	SS2
	Bayboro	39.9	NS	
51.	Bladen-	11.0	SS	NS
	Lenoir-	*	NS	
	Hyde	*	NS	
52.	Leaf-	15.9	NS	NS
	Lenoir-	*	NS	
	Craven	*	NS	
53.	Bladen-	11.0	SS	SS2
	Lenoir	*	NS	
54.	Bladen	11.0	SS	SS2
	Dunbar-	7.8	SS	
	Craven	*	NS	
55.	Bertie-	*	NS	NS
	Woodington	*	NS	
56.	Craven-	*	NS	SS2
	Marlboro-	4.6	S	
	Bladen	11.0	SS	
57.	Craven-	*	NS	NS
	Leaf-	15.9	NS	
	Lenior	*	NS	
58.	Craven-	*	NS	NS
	Bladen-	11.0	SS	
	Bertie	*	NS	
59.	Coxville-	*	NS	NS
	Exum	*	NS	
60.	Lenior-	*	NS	NS
	Leaf	15.9	NS	
61.	Lychburg-	6.0	S	SS1
	Dunbar-	7.8	SS	
	Rains	13.1	SS	
62.	Lenior-	*	NS	NS
	Craven-	*	NS	
	Coxville	*	NS	

NORTH CAROLINA

63.	Dunbar-	7.8	SS	SS1
	Lynchburg-	6.0	S	
	Goldsboro	12.3	SS	
64.	Hyde-	*	NS	NS
	Pocomoke-	*	NS	
	Rutlege	*	NS	
65.	Bayboro-	39.9	NS	NS
	Hyde	*	NS	
66.	Portsmouth-	*	NS	NS
	Woodington	*	NS	

OHIO

Land Resources	Soil Association	CEC	Suscept. Level	Assoc. Suscept. Rating
1. Soils in high lime glacial lake sediments	1. Hoytville-	33.5	NS	NS
	Nappanee	28.1	NS	
	2. Blount-	20.8	NS	NS
	Haskins-	19.7	NS	
	Pewamo	30.6	NS	
	3. Nappanee-	28.1	NS	NS
	St. Clair	*	NS	
	4. Latty-	*	NS	NS
	Nappanee	28.1	NS	
	5. Paulding-	*	NS	NS
	Roselms	*	NS	
	6. Toledo-	*	NS	NS
	Fulton	*	NS	
	7. Montgomery	*	NS	NS
	Pewamo-	30.6	NS	
	Del Rey	*	NS	
	8. Lenawee-	*	NS	NS
	Del Rey-	*	NS	
	Haskins	19.7	NS	
	9. Del Rey-	*	NS	NS
	Fulton-	*	NS	
	Toledo	*	NS	
	10. Tuscola-	*	NS	NS
	Sisson-	*	NS	
	Kibbie	*	NS	
	11. Haney-	*	NS	NS
	Haskins-	19.7	NS	
	Belmore	*	NS	
	12. Millgrove-	*	NS	NS
	Mermill-	*	NS	
	Haskins	19.7	NS	

OHIO

	13. Granby-	*	NS	NS
	Ottokee-	*	NS	
	Tedrow	*	NS	
	14. Blount-	20.8	NS	NS
	Toledo-	*	NS	
	Del Rey-	*	NS	
	15. Toledo-	*	NS	NS
	Bono	*	NS	
2. Soils in high lime glacial drift of Wisconsin Age	16. Blount-	20.8	NS	NS
	Pewamo	30.6	NS	
	17. Blount-	20.8	NS	NS
	Morley-	17.5	NS	
	Pewamo	30.6	NS	
	18. Miamian-	*	NS	NS
	Fox	14.2	SS	
	19. Miamian-	*	NS	NS
	Celina	18.9	NS	
	20. Miamian-	*	NS	NS
	Brookston-	31.3	NS	
	Crosby	20.3	NS	
	21. Crosby-	20.3	NS	NS
	Miamian-	*	NS	
	Milton	*	NS	
	22. Lewisburg-	*	NS	NS
	Castalia-	*	NS	
	Millsdale-	*	NS	
	Milton	*	NS	
	23. Brookston-	31.3	NS	NS
	Crosby	20.3	NS	
	24. Crosby-	20.3	NS	NS
	Brookston-	31.3	NS	
	Celina	18.9	NS	
	25. Fox-	14.2	SS	SS2
	Genesee-	16.3	NS	
	Ockley	13.6	SS	
	26. Fox-	14.2	SS	SS2
	Lippincott	*	NS	

OHIO

	27.	Russell-	15.9	NS	NS
		Miamian-	*	NS	
		Xenia-	*	NS	
		Wynn	*	NS	
	28.	Ragsdale-	34.8	NS	NS
		Fincastle	14.5	SS	
	29.	Reesville-	15.7	NS	NS
		Ragsdale	34.8	NS	
3. Soils in glacial drift of Illinoian Age.	30.	Rossmoyne-	14.0	SS	NS
		Eden-	30.9	NS	
		Cincinnati-	15.2	NS	
		Edenton	*	NS	
	31.	Rossmoyne-	14.0	SS	SS2
		Hickory	*	NS	
	32.	Rossmoyne-	14.0	SS	SS2
		Edenton-	*	NS	
		Loudon	*	NS	
	33.	Cana-	*	NS	NS
		Rossmoyne-	14.0	SS	
		Latham	*	NS	
	34.	Clermont-	11.6	SS	SS1
		Avonburg	12.2	SS	
	35.	Loudon-	*	NS	NS
		Edenton-	*	NS	
		Bratton	*	NS	
	36.	Boston-	*	NS	NS
		Bratton-	*	NS	
		Rossmoyne	14.0	SS	
	37.	Haubstadt-	*	NS	NS
		Otwell-	*	NS	
		Negley	11.4	SS	
	38.	Hanover-	*	SS	SS1
		Muskingum-	8.1	SS	
		Loudonville	*	SS	
	39.	Hanover-	*	SS	SS2
		Muskingum-	8.1	SS	
		Alford	1.5	NS	

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4. Soils in limestone and shale.	40. Bratton-	*	NS	NS
	Opequon-	*	NS	
	Lawshe-	*	NS	
	Nicholson	*	NS	
	41. Eden-	30.9	NS	NS
	Bratton-	*	NS	
	Opequon	*	NS	
5. Soils in low lime glacial lake sediments.	42. Mahoning-	*	NS	NS
	Haskins-	19.7	NS	
	Allis	*	NS	
	43. Canadice-	*	NS	NS
	Caneadea	*	NS	
	44. Conneaut-	*	NS	NS
	Otisville-	*	SS	
	Elnora	*	NS	
6. Soils in low lime glacial drift of Wisconsin Age.	45. Venango-	*	NS	NS
	Frenchtown-	*	NS	
	Cambridge	28.8	NS	
	46. Mahoning-	*	NS	NS
	Trumbull	*	NS	
	47. Mahoning-	*	NS	NS
	Ellsworth	*	NS	
	48. Geeburg-	*	NS	NS
	Glenford	*	NS	
	49. Wadsworth-	*	NS	NS
	Rittman	*	NS	
	50. Rittman-	*	NS	NS
	Wadsworth	*	NS	
	51. Remsen-	*	NS	NS
	Geeburg	*	NS	
	52. Canfield-	*	NS	NS
	Wooster-	*	NS	
	Ravenna	*	NS	
	53. Bennington-	*	NS	NS
	Cardington-	*	NS	
	Pewamo-	30.6	NS	
	54. Cardington-	*	NS	NS
	Alexandria-	*	NS	
	Bennington	*	NS	

	55. Bennington-	*	NS	NS
	Pewamo	30.6	NS	
	56. Bennington-	*	NS	NS
	Cardington	*	NS	
	57. Tiro-	*	NS	NS
	Luray	*	NS	
	58. Bogart-	*	NS	NS
	Chili-	*	NS	
	Jimtown	*	NS	
	59. Chili-	*	NS	NS
	Wheeling-	10.5	SS	
	Canfield	*	NS	
	60. Chili-	*	NS	NS
	Wheeling-	10.5	SS	
	Chagrin	*	NS floods	
	61. Sebring-	*	NS	NS
	Fitchville	*	NS	
	62. Fitchville-	*	NS	NS
	Chili-	*	NS	
	Carlisle	*	NS	
	63. Carlisle-	*	NS	NS
	Linwood	*	NS	
	64. Platea-	*	NS	NS
	Sheffield	*	NS	
7. Soils in sandstone and shale.	65. Westmore-	*	NS	NS
	Guernsey	9.7	SS	
	66. Gilpin-	12.3	SS	SS2
	Upshur-	31.4	NS	
	Guernsey	9.7	SS	
	67. Upshur-	31.4	NS	NS
	Gilpin-	12.3	SS	
	Dekalb	17.3	NS	
	68. Gilpin-	12.3	SS	SS2
	Guernsey-	9.7	SS	
	Keene	*	NS	
	69. Upshur-	31.4	NS	NS
	Gilpin-	12.3	SS	
	Woodsfield	*	NS	
	70. Guernsey-	9.7	SS	SS2
	Westmore-	*	NS	
	Westmoreland	12.0	SS	

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71.	Gilpin-	12.3	SS	SS2
	Dekalb	17.3	NS	
72.	Guernsey-	9.7	SS	SS1
	Westmoreland-	12.0	SS	
	Brookside	*	NS	
73.	Dekalb-	17.3	NS	NS
	Weikert	*	SS	
74.	Westmoreland-	12.0	SS	SS1
	Gilpin	12.3	SS	
75.	Guernsey-	9.7	SS	NS
	Elba-	*	NS	
	Brookside	*	NS	
76.	Upshur-	31.4	NS	NS
	Woodsfield-	*	NS	
	Gilpin	12.3	SS	
77.	Upshur-	31.4	NS	SS2
	Gilpin-	12.3	SS	
	Zanesville-	10.4	SS	
	Dekalb	17.3	NS	
78.	Upshur-	31.4	NS	SS2
	Gilpin-	12.3	SS	
	Monongahela	7.8	SS	
79.	Strip Mine Spoil-	*	NS	NS
	Guernsey-	9.7	SS	
	Westmore	*	NS	
80.	Gilpin-	12.3	SS	SS2
	Zanesville-	10.4	SS	
	Keene	*	NS	
81.	Gilpin-	12.3	SS	SS2
	Keene	*	NS	
82.	Muskingum-	8.1	SS	SS2
	Berks	16.9	NS	
83.	Latham-	*	NS	NS
	Muskingum	8.1	SS	
84.	Muskingum-	8.1	SS	NS
	Dekalb-	17.3	NS	
	Latham	*	NS	

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85. Colyer-	*	SS	SS2
Trappist-	*	SS	
Berks	16.9	NS	
86. Gilpin-	12.3	SS	NS
Latham-	*	NS	
Dekalb	17.3	NS	
87. Monongahela-	7.8	SS	SS1
Allegheny	6.8	SS	
88. Gilpin-	12.3	SS	NS
Dekalb-	17.3	NS	
Strip Mine Spoil	*	NS	
89. Guernsey-	9.7	SS	NS
Upshur-	31.4	NS	
Strip Mine Spoil	*	NS	

PENNSYLVANIA

Land Resources	Soil Association	CEC	Suscept. Level	Assoc. Suscept. Rating
A. Soils formed in materials weathered from noncarbonate sedimentary rocks				
1. Substrata of reddish sandstone, shales and siltstone	1. Abbotstown-	*	NS	NS
	Doylestown-	*	NS	
	Reading	*	NS	
	2. Calvin-	12.5	SS	NS
	Leck Kill-	*	NS	
	Meckesville	17.8	NS	
	3. Lansdale-	13.4	SS	SS1
	Penn-	11.3	SS	
	Reading	*		
	4. Lewisberry-	*	SS	SS2
	Penn	11.3	SS	
	5. Meckesville-	17.8	NS	NS
	Albrights	*	NS	
	6. Penn-	11.3	SS	SS2
	Klinesville-	*	SS	
	Reaville	*	NS	
2. Substrata of yellowish and brownish sandstone shale and siltstone	7. Berks-	16.9	NS	SS2
	Weikert-	12.9	SS	
	Bedington	*	SS	
	8. Cookport-	7.6	SS	SS2
	Clymer	16.3	NS	
	Hazelton	8.4	SS	
	9. Cookport-	7.6	SS	SS1
	Cavode-	9.5	SS	
	Wharton	10.6	SS	
	10. Culleoka-	*	SS	SS1
	Weikert	12.9	SS	
	11. Dekalb	17.3	NS	NS
	Laidig-	12.9	SS	
	Buchanan	19.4	NS	

		12. Edgemont-	*	SS	SS1
		Hazleton	8.4	SS	
		13. Gilpin-	12.3	SS	SS2
		Clymer-	16.3	NS	
		Cookport	7.6	SS	
		14. Gilpin-	12.3	SS	SS1
		Hazleton-	8.4	SS	
		Calvin	12.5	SS	
		15. Gilpin-	12.3	SS	SS1
		Ernest-	11.0	SS	
		Wharton	10.6	SS	
		16. Gilpin-	12.3	SS	SS2
		Upshur-	31.4	NS	
		Weikert	12.9	SS	
		17. Hazleton-	8.4	SS	SS1
		Cookport	7.6	SS	
		18. Hazleton-	8.4	SS	SS1
		Gilpin-	12.3	SS	
		Ernest	11.0	SS	
		19. Rayne-	5.0	S	S2
		Wharton-	10.6	SS	
		Ernest	11.0	SS	
	3. Substrata of reddish, yellowish and brownish clay shale	20. Cavode-	9.5	SS	SS1
		Wharton-	10.6	SS	
		Gilpin	12.3	SS	
		21. Upshur-	31.4	NS	SS2
		Gilpin-	12.3	SS	
		Clarksburg	13.8	SS	
B. Soils formed in materials weathered from carbonate sedimentary rocks					
	4. Substrata of limestone and dolomite.	22. Duffield-	16.8	NS	NS
		Conestoga-	13.6	SS	
		Hagerstown	*	NS	
		23. Hagerstown-	*	NS	NS
		Duffield	16.8	NS	

	24. Hagerstown-	*	NS	NS
	Edom	*	NS	
	25. Murrill-	6.9	SS	SS1
	Clarksburg	13.8	SS	
	26. Washington-	*	NS	NS
	Duffield	16.8	NS	
5. Substrata of calcareous shale, limestone and sandstone	27. Edom-	*	NS	SS2
	Weikert-	12.9	SS	
	Klinesville	*	SS	
	28. Gernsey-	9.7	SS	SS1
	Culleoka	*	SS	
	29. Morrison-	*	SS	SS1
	Vanderlip	*	SS	
6. Substrata of cherty limestone	30. Mertz-		SS	SS1
	Elliber-	5.7	S	
	Kreamer		SS	
C. Soils formed in materials weathered from igneous and metamorphic rocks				
7. Substrata of diabase, gabbro, and diorite	31. Neshaminy-	14.1	SS	SS2
	Glenelg	22.2	NS	
	32. Towhee-	*	NS	NS
	Neshaminy	14.1	SS	
8. Substrata of schist geniss and porcelonite, metarhyolite and metabosalt	33. Chester-	16.6	NS	NS
	Glenelg	22.2	NS	
	34. Edgemont-	*	SS	SS1
	Highfield	*	SS	
	35. Glenelg-	22.2	NS	NS
	Manor	13.7	SS	
	36. Highfield-	*	SS	SS2
	Arendtsville-	*	NS	
	Myersville	*	SS	
	37. Lehigh-	*	NS	SS2
	Brecknock-	10.8	SS	
	Neshaminy	14.1	SS	

PENNSYLVANIA

D. Soils formed in Glacial till

9. Substrata reddish	38.	Oquago-	*	NS	NS
		Lordstown	*	NS	
	39.	Oquago-	*	NS	NS
		Wellsboro-	*	SS	
		Morris	*	NS	
	40.	Morris-	*	NS	NS
		Wellsboro-	*	SS	
		Oquago	*	NS	
	41.	Wellsboro-	*	SS	SS2
		Morris-	*	NS	
		Lackawanna	17.2	NS	
10. Substrata grayish	42.	Canfield-	*	NS	NS
		Rovenna	*	NS	
	43.	Erie-	*	NS	NS
		Langford	29.1	NS	
	44.	Hanover-	*	SS	SS2
		Alvira	*	NS	
	45.	Hartleton-	*	SS	NS
		Berks-	16.9	NS	
		Watson	*	NS	
	46.	Ravenna-	*	NS	NS
		Frenchtown	*	NS	
	47.	Sheffield-	*	NS	NS
		Platea	12.8	SS	
	48.	Swartswood-	*	SS	SS2
		Wurtsboro	*	NS	
	49.	Venango-	*	NS	NS
		Cambridge	28.8	NS	
	50.	Volusia-	20.6	NS	NS
		Mardin	26.2	NS	
		Lordstown	*	NS	

PENNSYLVANIA

E. Soils formed in unconsolidated water sorted materials

11. Substrata of stratified fluvial sand, silt, gravel	51. Chenango- Howard- Pope	17.9 * 4.1	NS NS S	NS
	52. Conotton- Birdsall	* *	NS NS	NS
	53. Duncannon- Barbour- Pope	* * 4.1	SS S S	S2
	54. Monongahela- Philo- Melvin	7.8 11.4 17.3	SS SS NS	SS2
	55. Pope- Alton- Chenango	4.1 * 17.9	S SS NS	SS1
	56. Wayland- Chenango- Braceville	* 17.9 *	NS NS NS	NS
12. Substrata of lacustrine clay and silt	57. Canadice- Caneadea	* *	NS NS	NS
13. Substrata of marine clay and sand	58. Howell- Fallingston	* *	NS NS	NS

RHODE ISLAND

Land Resources	Soil Association	CEC	Suscept. Level	Assoc. Suscept. Rating
1. Areas of glaciated uplands dominated by deep soils with a friable substratum.	1. Canton- Charlton- Sutton	* 14.3 *	SS SS NS	SS2
	2. Charlton- Rock outcrop	14.3 *	SS SS	SS1
	3. Gloucester- Hinckley	11.5 7.6	SS SS	SS1
	4. Narragansett- Bridgehampton- Wapping	* 28.4 *	NS NS NS	NS
2. Areas of glaciated uplands dominated by deep soils with a firm substratum.	5. Newport- Pittstown	14.9 *	SS NS	SS2
	6. Paxton- Woodbridge	21.8 17.5	NS NS	NS
	7. Ridgebury- Whitman- Leicester	14.6 * 21.6	SS NS NS	NS
	8. Stissing- Mansfield	* *	NS NS	NS
3. Areas of outwash plains, terraces, kames, and eskers dominated by deep soils with a sandy and gravelly substratum.	9. Enfield- Bridgehampton- Agawam	* 28.4 6.9	SS NS SS	SS2
	10. Hinckley- Merrimac	7.6 41.1	SS NS	SS2
	11. Walpole- Scarboro- Rumney	* * *	NS NS NS	NS
4. Areas of inland depressions and low-lying positions dominated by organic soils.	12. Carlisle- Adrian	* *	NS NS	NS
5. Areas of coastal lowlands affected by tidal water and dominated by soils formed in sandy sediments.	13. Matunuck- Udipsamments- Beaches	* * *	NS SS NS	NS

SOUTH CAROLINA

Land Resource	Soil Association	CEC	Suscept. Level	Assoc. Suscept. Rating
1. Blue Ridge Mountains	1. Evard-	*	SS	SS1
	Edneyville	*	SS	
	2. Fannin-	*	SS	SS1
	Talladega	*	SS	
	3. Ashe-	*	SS	SS1
	Saluda-	*	SS	
	Edneyville	*	SS	
2. Southern Piedmont	4. Iredell-	*	NS	NS
	Mecklenburg	*	NS	
	5. Wilkes-	*	NS	NS
	Winnsboro-	*	NS	
	Mecklenburg	*	NS	
	6. Pacolet-	*	SS	SS1
	Grover	*	SS	
	7. Pacolet-	*	SS	SS2
	Madison-	*	SS	
	Wilkes	*	NS	
	8. Tatum-	*	SS	SS1
	Nason	*	SS	
	9. Madison-	*	SS	SS1
	Cecil	8.4	SS	
	10. Cecil-	8.4	SS	SS1
	Hiwassee-	*	SS	
	Cataula	*	SS	
	11. Cecil-	8.4	SS	SS1
	Appling-	*	SS	
	Cataula	*	SS	
	12. Georgeville-	*	SS	SS1
	Herndon	*	SS	
	13. Cecil-	8.4	SS	SS2
	Mecklenburg-	*	NS	
	Cataula	*	SS	

SOUTH CAROLINA

3. Carolina and Georgia Sandhills	14. Lakeland-	2.4	S	S2
	Fuquay-	*	SS	
	Troup	4.2	S	
	15. Troup-	4.2	S	SS1
	Wagram-	*	SS	
	Vaucluse	*	SS	
	16. Fuquay-	*	SS	SS1
	Dothan-	*	SS	
	Blanton	5.6	S	
4. Southern Coastal Plain	17. Dothan-	*	SS	SS1
	Fuquay-	*	SS	
	Rains	10.7	SS	
	18. Norfolk-	3.9	S	SS1
	Coxville-	16.0	NS	
	Wagram	*	SS	
	19. Varina-	*	SS	SS1
	Fuquay-	*	SS	
	Dothan	*	SS	
	20. Faceville-	4.9	S	SS1
	Fuquay-	*	SS	
	Orangeburg	7.0	SS	
	21. Wagram-	*	SS	S2
	Lakeland-	2.4	S	
	Norfolk	3.9	S	
5. Atlantic Coast Flatwoods	22. Cantey-	*	NS	NS
	Smithboro-	*	NS	
	Persanti	*	NS	
	23. Goldsboro-	12.3	SS	SS1
	Rains-	10.7	SS	
	Norfolk	3.9	S	
	24. Goldsboro-	12.3	SS	SS2
	Chipley	*	NS	
	25. Lynchburg-	6.0	S	SS1
	Goldsboro-	12.3	SS	
	Rains	10.7	SS	
	26. Argent-	*	NS	NS
	Bladen	11.0	SS	
	27. Craven-	*	NS	NS
	Bladen	11.0	SS	

SOUTH CAROLINA

28.	Yemassee-	*	NS	NS
	Wahee-	*	NS	
	Bladen	11.0	SS	
29.	Meggett-	*	NS	NS
	Santee	*	NS	
30.	Wahee-	*	NS	NS
	Bethera	*	NS	
31.	Seabrook-	*	NS	NS
	Yonges-	*	NS	
	Seewee	*	NS	
32.	LynnHaven-	*	NS	NS
	Leon-	*	NS	
	Rutlege	*	NS	
33.	Chipley-	*	NS	NS
	Cainhoy-	*	S	
	Ocilla	*	NS	
34.	Wehadkee-	*	NS	NS
	Chewacla	*	NS	
35.	Johnston-	*	NS	NS
	Rutlege	*	NS	
36.	Tawcaw-	*	NS	NS
	Chastain	*	NS	
37.	Capers-	*	NS	NS
	Bohicket	*	NS	
38.	Fripp-	*	S	S2
	Beach	*	NS	

TENNESSEE

Land Resource	Soil Association	CEC	Suscept. Level	Assoc. Suscept. Rating
A. Soils of the major stream bottoms. (Entisols, Inceptisols, Mollisols, Alfisols, Ultisols)				
1. Loamy, silty, and sandy soils of the Mississippi River bottoms. (Fluvaquents, Udifluvents, Haplaquepts, Udipsamments, Argiudolls, Hapludolls, Haplaquolls.)	1. Commerce-	*	NS	SS2
	Robinsonville-	*	SS	
	Crevasse	*	SS	
	2. Adler-	8.7	SS	NS
	Morganfield-	*	NS	
	Convent	*	NS	
	3. Reelfoot-	*	NS	NS
	Tiptonville-	*	NS	
	Commerce	*	NS	
2. Clayey soils of the Mississippi River bottoms (Haplaquepts, Ochraqualfs, Hapludalfs, Hapludolls)	4. Sharkey-	43.8	NS	NS
	Tunica-	*	NS	
	Bowdre	*	NS	
	5. Forestdale-	*	NS	NS
	Alligator-	52.6	NS	
	Dundee	*	NS	
3. Silty and loamy soils of the bottoms in the loess and coastal plain regions. (Fluvaquents, Udifluvents)	6. Falaya-	13.4	SS	SS2
	Waverly-	*	NS	
	Collins	10.5	SS	
	7. Falaya-	13.4	SS	SS2
	Waverly-luka	*	NS	
4. Loamy, silty, and clayey soils of the bottoms and terraces in the Highland Rim and Nashville Basin (Hapludolls, Dystrochepts, Eutrochrepts, Hapludults, Hapludalfs)·	8. Wolftever-	21.1	NS	NS
	Egam-	28.5	NS	
	Beason-	21.2	NS	
	Lindside	*	NS	
	9. Ennis-	*	SS	SS2
	Humphreys-	*	SS	
	Lobelville	*	NS	
	10. Arrington-	*	NS	NS
	Lindell-	*	NS	
	Egam-		NS	
	Armour	15.2	NS	

TENNESSEE

B. Soils of the Loess Region (Alfisols, Entisols, Ultisols)

1. Rolling to steep, well-drained and moderately well drained, silty soils from thick loess. (Hapludalfs, Fragiudalfs, Fluvaquents, Udifluvents)	11.	Memphis- Loring	13.1 12.2	SS SS	SS1
2. Level to rolling moderately well drained and well-drained, silty soils from thick loess. (Fragiudalfs, Hapludallfs, Fluvaquents, Udifluvents)	12.	Grenada- Loring- Memphis	11.5 12.2 13.1	SS SS SS	SS1
3. Level and undulating poorly drained to moderately well drained, silty soil from thick loess. (Fragiudalfs, Fragiaqualfs, Ochraqualfs, Haplaquolls, Hapludalfs, Fluvaquents, Udifluvents)	13.	Grenada- Calloway- Henry	11.5 13.3 10.7	SS SS SS	SS1
	14.	Routon- Calloway- Center	* 13.3 *	NS SS NS	NS
	15.	Dekoven- Center	* *	NS NS	NS
4. Undulating and rolling, well-drained, and moderately well drained, silty and loamy soils from loess and coastal plain sediment. (Paleudalfs, Fragiudalfs, Hapludalfs, Paleudults, Fluvaquents, Udifluvents)	16.	Lexington- Grenada- Memphis- Ruston	11.1 11.5 13.1 5.7	SS SS SS S	SS1

C. Soils of the Coastal Plain Region (Ultisols, Alfisols, Entisols)				
1. Hilly, loamy soils from coastal plain sediment and undulating and rolling, silty soils from thin loess. (Paleudults, Paleudalfs, Fragiudalfs, Fluvaquents, Udifluvents)	17. Ruston- Lexington- Providence	5.7 11.1 11.0	S SS SS	SS1
2. Hilly, clayey soils from coastal plain sediment and rolling and undulating silty soils from thin loess. (Paleudults, Hapludults, Fragiudalfs, Fragidults, Hapludalfs, Paleudalfs, Fluvaquents, Udifluvents)	18. Shubuta- Cuthbert- Dulac	6.8 * 8.4	SS SS SS	SS1
	19. Oktibbeha- Boswell- Dulac	* * 8.4	NS NS SS	NS
	20. Shubuta- Silerton- Bodine- Dulac	6.8 10.8 8.7 8.4	SS SS SS SS	SS1
3. Undulating and rolling, silty soil from alluvium and loess. (Hapludults, Fragiudults)	21. Pickwick- Paden	12.9 11.8	SS SS	SS1
D. Soils of the Highland Rim (Ultisols, Inceptisols Alfisols)				
1. Hilly and steep, cherty, clayey and loamy soils and narrow strips of silty soils from limestone, thin loess, and shale. (Mainly Paleudults with monor areas of Fragiudults, Hapludults, Dystrochrepts, Hapludalfs)	22. Bodine- Mountview- Dickson	8.7 * 9.6	SS SS SS	SS1
	23. Bodine- Talbott	8.7 16.3	SS NS	SS2
	24. Sulphura- Christian- Mountview	* 9.4 *	SS SS SS	SS1

TENNESSEE

2. Hilly and rolling, cherty and clayey soils and undulating silty soils from limestone and thin loess. (Paleudults, Hapludults, Fragiudults)	25.	Baxter (Fullerton)-	9.1	SS	SS1
		Mountview-	*	SS	
		Dickson	9.6	SS	
	26.	Christian-	9.4	SS	SS1
		Mountview	*	SS	
3. Undulating and rolling, silty and loamy soils from thin loess, coastal plain sediment, and limestone. (Fragiudults, Fragiaquults, Paleudults, Hapludults)	27.	Brandon-	*	SS	SS1
		Lax	*	SS	
	28.	Dickson-	9.6	SS	SS1
		Mountview-	*	SS	
		Guthrie	11.0	SS	
4. Undulating and rolling, silty and clayey soils from thin loess, alluvium, and limestone. (Paleudults, Paleudalfs)	29.	Pembroke-	12.4	SS	SS1
		Crider	11.2	SS	
	30.	Baxter-	9.1	SS	SS1
		Bewleyville-	*	SS	
		Pembroke	12.4	SS	
5. Rolling and undulating, clayey, loamy, and silty soils from alluvium and thin loess (Paleudults)	31.	Waynesboro	8.9	SS	SS1
		Decatur-	10.6	SS	
		Bewleyville-	*	SS	
		Curtistown	*	SS	
E. Soils of the outer part of the Nashville Basin. (Alfisols, Ultisols, Mollisols, Inceptisols)					
1. Hilly and steep, cherty and clayey soils from colluvium and limestone. (Hapludults, Hapludalfs, Paledults)	32.	Dellrose-	13.9	SS	SS2
		Mimosa-	19.5	NS	
		Bodine	8.7	SS	

2. Rolling and hilly, clayey and loamy soils from phosphatic limestone shale and alluvium; and limestone outcrops. (Hapludalfs, Eutrochrepts, Hapludolls)	33. Mimosa-	19.5	NS	NS
	Armour-	15.3	NS	
	Rock outcrop	*	SS	
	34. Stiversville-	*	SS	SS1
	Hampshire-	*	SS	
	Inman	*	SS	
3. Undulating and rolling, clayey and silty soils from phosphatic limestone and alluvium. (Paleudalfs, Paleudults, Hapludults)	35. Maury-	*	NS	NS
	Braxton-	*	NS	
	Harpeth	*	SS	
F. Soils of the inner part of the Nashville Basin. (Alfisols, Mollisols)				
1. Undulating and rolling, clayey soils from limestone; and rockcrops. (Hapludalfs, Hapludolls, Rendolls)	36. Talbott-	16.3	NS	NS
	Gladeville-	*	NS	
	Barfield-	*	NS	
	Rock outcrop	*	SS	
2. Undulating, clayey and silty soils from limestone and alluvium. (Hapludalfs, Paleudalfs)	37. Bradyville-	*	NS	NS
	Talbott-	16.3	NS	
	Lomond-	*	NS	
	Cumberland	10.2	SS	
3. Level and undulating, clayey soils from alluvium and limestone. (Haplaquolls, Ochraqualfs, Hapludalfs)	38. Roellen-	*	NS	NS
	Tupelo-	*	NS	
	Capshaw	*	NS	

TENNESSEE

H. Soils of the Cumberland Plateau and Mountains. (Ultisols and Inceptisols)					
1. Undualting to hilly, loamy soils from sandstone and shale. (Hapludults and Dystrochrepts)	39.	Hartsells-	*	SS	SS1
		Lonewood-	*	SS	
		Ramsey-	*	SS	
		Gilpin	12.3	SS	
	40.	Hartsells-	*	SS	SS1
		Ramsey-	*	SS	
		Gilpin	12.3	SS	
2. Steep and hilly, stony and loamy soils from sandstone, shale, and limestone; and rock outcrops. (Dystrochrepts, Hapludults, Paleudults, Hapludalfs)	41.	Bouldin-	*	SS	SS1
		Rock outcrop-	*	SS	
		Ramsey	*	SS	
	42.	Ramsey-	*	SS	SS1
		Hartsells-	*	SS	
		Grimsley-	*	SS	
		Gilpin-	12.3	SS	
	43.	Muskingum-	11.1	SS	SS1
		Gilpin-	12.3	SS	
		Jefferson	5.5	S	
J. Soils of the Ridges and Valleys (Ultisols, Alfisols, Inceptisols)					
1. Rolling to steep, cherty and clayey soils from dolomitic limestone. (Paleudults)	44.	Fullerton-	8.2	SS	SS1
		Dewey	11.2	SS	
	45.	Fullerton-	8.2	SS	SS1
		Bodine	8.7	SS	
2. Rolling and hilly, clayey soils from dolomitic limestone. (Paleudults)	46.	Dunmore-	6.9	SS	SS1
		Dewey	11.2	SS	

3. Undulating to hilly, clayey and loamy soils from alluvium and limestone. (Paleudults, Hapludults, Fragiudults)	47. Decatur-	10.6	SS	SS1
	Dewey-	11.2	SS	
	Waynesboro	8.9	SS	
	48. Waynesboro-	8.9	SS	SS1
	Etowah-	8.6	SS	
	Sequatchie-	10.3	SS	
	Allen	4.9	S	
	49. Waynesboro-	8.9	SS	SS1
	Allen-	4.9	S	
	Sequatchie-	10.3	SS	
	Statler	*	NS	
	50. Holston-	9.5	SS	SS1
	Monongahela	6.5	SS	
4. Steep and hilly, shaly, clayey and loamy soils from calcareous shale. (Eutrochrepts, Hapludalfs)	51. Dandridge-	21.2	NS	NS
	Needmore-	11.8	SS	
	Whitesburg	*	NS	
5. Undulating to hilly, clayey and loamy soils from shale and limestone. (Hapludalfs, Hapludults, Eutrochrepts, Dystrochrepts)	52. Talbott-	16.3	NS	SS2
	Rock outcrop-	*	SS	
	Etowah	8.6	SS	
	53. Litz-	*	SS	SS2
	Sequoia-	12.6	SS	
	Talbott	16.3	NS	
	54. Talbott-	16.3	NS	NS
	Sequoia-	12.6	SS	
	Dandridge	21.2	NS	
6. Steep ridges and rolling valleys with stony, loamy and clayey soils. (Dystrochrepts, Hapludalfs, Hapludults)	55. Wallen-	*	SS	SS2
	Talbott-	16.3	NS	
	Montevallo	*	SS	
	56. Ramsey-	*	SS	SS1
	Wallen-	*	SS	
	Jefferson	5.5	S	
7. Hilly and steep, dark red, clayey and loamy soils from calcareous sandstone. (Rhodudults, Paleudults)	51. Tellico-	13.5	SS	SS1
	Alcoa	9.5	SS	

VERMONT

Chittenden County

Land Resource	Soil Association	CEC	Suscept. Level	Assoc. Suscept. Rating
1. Soils that formed in water-deposited material in the Champlain Valley	1. Vergennes- Covington	29.3 39.4	NS NS	NS
	2. Covington	39.4	NS	NS
	3. Enosburg- Whately- Vergennes	* * 29.3	NS NS NS	NS
	4. Munson- Raynham- Scantic	* * *	NS NS NS	NS
	5. Hartland- Belgrade- Munson	25.9 * *	NS NS NS	NS
	6. Limerick- Hadley- Winooski	* 11.8 19.6	NS SS NS	NS
	7. Muck- Peat	* *	NS NS	NS
	8. Adams- Windsor	* 6.0	SS S	S2
	9. Colton- Stetson	* *	SS SS	SS1
2. Soils that formed in glacial till in the Chaplain Valley	10. Farmington- Nellis- Stockbridge	* * 15.1	NS NS NS	NS
	11. Palatine- Vergennes	* 29.3	NS NS	NS
	12. Stockbridge- Nellis- Palatine	15.1 * *	NS NS NS	NS

VERMONT

Chittenden County

3. Soils of the Green Mountains and associated foothills	13. Lyman-	*	SS	SS2
	Marlow	27.1	NS	
	14. Peru-	20.9	NS	NS
	Marlow	27.1	NS	
	15. Peru-	20.9	NS	NS
	Cabot	16.3	NS	

Grand Isle County

1. Level to gently sloping, wet and slightly wet soils.	1. Covington-	39.4	NS	NS
	Kendaia-	*	NS	
	Swanton-	*	NS	
	Amenia	18.1	NS	
2. Productive loamy soils-most are shallow, but some are deep to limestone bedrock.	2. Benson-	32.5	NS	NS
	Amenia-	18.1	NS	
	Nellis	*	NS	
3. Bog (organic) soils and very wet clay soils	3. Carlisle-	*	NS	NS
	Livingston-	*	NS	
	Balch	*	-	
4. Nearly level or gently sloping deep sandy and gravelly soils, and sandy soils underlain by clay.	4. Kars-	*	NS	NS
	Elmwood	*	NS	
	Melrose	11.4	SS	
5. Loamy soils shallow to slate or shale bedrock and deep wet clayey soils.	5. St. Albans-	*	SS	SS2
	Dutchess-	*	SS	
	Covington	39.4	NS	

Windsor County

1. Soils that formed in water-deposited materials on terraces and old lake plains	1. Hadley-	11.8	SS	NS
	Winooski-	19.6	NS	
	Limerick	*	NS	
	2. Unadilla-	12.5	SS	S2
	Windsor	6.0	S	
	3. Merrimac-	41.0	NS	NS
	Windsor	6.0	SS	
2. Soils that formed in glacial till in the Green Mountains and foothills.	4. Lyman-	*	SS	NS
	Marlow-	27.1	NS	
	Peru	20.9	NS	

VERMONT

Windsor County

	5. Marlow-	27.1	NS	NS
	Peru-	20.9	NS	
	Lyman	*	SS	
	6. Peru-	20.9	NS	NS
	Marlow-	27.1	NS	
	Lyman	*	SS	
3. Soils formed in glacial till on uplands in the eastern part of the county.	7. Woodstock-	*	SS	NS
	Paxton-	20.2	NS	
	Woodbridge	17.5	NS	
	8. Woodstock-	*	SS	SS1
	Colrain	14.0	SS	
	9. Paxton-	20.2	NS	NS
	Woodbridge-	17.5	NS	
	Woodstock	*	SS	
	10. Colrain-	14.0	SS	SS2
	Buckland	16.0	NS	
	11. Colrain-	14.0	SS	SS2
	Pomfret-	*	SS	
	Buckland	16.0	NS	
	12. Glover-	*	SS	SS2
	Calais	17.9	NS	
	13. Calais-	17.9	NS	NS
	Buckland	16.0	NS	
	14. Cabot-	16.3	NS	NS
	Muck	*	NS	

Addison County

1. Soils that formed in water-deposited material in the Champlain Valley.	1. Vergennes-	29.3	NS	NS
	Covington	39.4	NS	
	2. Covington	39.4	NS	NS
	3. Swanton-	*	NS	NS
	Elmwood	*	NS	
	4. Raynham-	*	NS	NS
	Amenia	18.1	NS	
	5. Winooski-	19.6	NS	NS
	Limerick	*	NS	
	6. Muck-	*	NS	NS
	Peat	*	NS	

VERMONT

Addison County

	7. Colton-	*	SS	SS1
	Stetson-	*	SS	
	Adams	*	SS	
2. Soils that formed in glacial till in the Chaplain Valley.	8. Farmington-	*	NS	NS
	Nellis	*	NS	
	9. Nassau-	*	SS	SS1
	Dutchess	*	SS	
	10. Dutchess-	*	SS	SS1
	Nassau	*	SS	
	11. Nellis-	*	NS	NS
	Amenia	18.1	NS	
3. Soils of the Green Mountains and associated foothills.	12. Lyman-	*	SS	NS
	Berkshire-	*	NS	
	Marlow	27.1	NS	
	13. Berkshire-	*	NS	NS
	Marlow (sloping)	27.1	NS	
	14. Berkshire-	*	NS	NS
	Marlow (steep)	27.1	NS	
	15. Calais-	17.9	NS	NS
	Cabot-	16.3	NS	
	Buckland	16.0	NS	
	16. Berkshire-	*	NS	NS
	Cabot-	16.3	NS	
	Peru	20.9	NS	
	17. Peru-	20.9	NS	NS
	Cabot	16.3	NS	

Orange County

1. Soils that formed in water-deposited material in valleys	1. Hadley-	11.8	SS	NS
	Winooski-	19.6	NS	
	Limerick	*	NS	
	2. Belgrade-	*	NS	NS
	Hartland	25.9	NS	
	3. Merrimac-	41.0	NS	SS2
	Agawam-	6.9	SS	
	Windsor-	6.0	S	
	Winooski	19.6	NS	

VERMONT

Orange County

2. Soils on uplands	4. Buckland-	16.0	NS	NS
	Cabot	16.3	NS	
	5. Vershire-	*	SS	SS2
	Glover-	*	SS	
	Buckland	16.0	NS	
	6. Colrain-	14.0	SS	SS2
	Buckland-	16.0	NS	
	Tunbridge	*	SS	
	7. Pomfret-	*	SS	SS2
	Tunbridge-	*	SS	
	Buckland	16.0	NS	
	8. Tunbridge-	*	SS	SS1
	Woodstock-	*	SS	
	Colrain-	14.0	SS	
	Buckland	16.0	NS	
	9. Tunbridge-	*	SS	SS2
	Woodstock-	*	SS	
	Buckland	16.0	NS	
	10. Tunbridge-	*	SS	SS1
	Woodstock-	*	SS	
	Stowe	*	SS	

Franklin County

1. Soils that formed in water-deposited material on floodplains.	1. Limerick-	*	NS	NS
	Hadley-	11.8	SS	
	Winooski	19.6	NS	
2. Soils that formed in glacial till in the Champlain Valley	2. St. Albans-	*	SS	SS2
	Farmington	*	NS	
	3. Georgia-	*	NS	NS
	St. Albans	*	SS	
	4. Massena	*	NS	NS
3. Soils that formed in water-deposited material on terraces and old lake plains	5. Enosburg-	*	NS	NS
	Walpole	*	NS	
	6. Munson-	*	NS	NS
	Buxton-	20.5	NS	
	Belgrade	*	NS	
	7. Munson-	*	NS	NS
	Scantic	*	NS	
	8. Panton-	*	NS	NS
	Covington	39.4	NS	

VERMONT

Franklin County

	9. Windsor- Eldridge	6.0 *	S NS	SS1
4. Soils that formed in glacial till in the Green Mountains and uplands.	10. Muck- Peacham	* *	NS NS	NS
	11. Lyman- Marlow- Peru	* 27.1 20.9	SS NS NS	NS
	12. Peru- Marlow	20.9 27.1	NS NS	NS
	13. Peru- Cabot	20.9 16.3	NS NS	NS

Rutland County

1. Soils that formed in water-desposited and organic materials on terraces and old lake plains.	1. Vergennes- Covington	29.3 39.4	NS NS	NS
	2. Hartland- Belgrade	25.9 *	NS NS	NS
	3. Hinckley- Merrimac- Windsor	7.4 41.0 6.0	SS NS S	SS1
	4. Copake- Windsor	* 6.0	SS S	SS1
	5. Fredon- Halsey- Scantic	* * *	NS NS NS	NS
	6. Winooski- Limerick	19.6 *	NS NS	NS
	7. Hadley- Winooski- Limerick	11.8 19.6 *	SS NS NS	NS
	8. Muck and Peat	*	NS	NS
2. Soils that formed in glacial till in the Green Mountains and foothills.	9. Lyman- Marlow- Peru	* 27.1 20.9	SS NS NS	NS
	10. Marlow- Peru- Lyman (sloping)	27.1 20.9 *	NS NS SS	NS
	11. Marlow- Peru- Lyman (steep)	27.1 20.9 *	NS NS SS	NS

VERMONT

Rutland County

	12. Peru- Marlow- Lyman	20.9 27.1 *	NS NS SS	NS
	13. Peru- Cabot	20.9 16.3	NS NS	NS
3. Soils formed in glacial till in the Champlain Valley.	14. Nellis- Amenia	* 18.1	NS NS	NS
	15. Stockbridge- Amenia	15.1 18.1	NS NS	NS
	16. Farmington- Nellis	* *	NS NS	NS
	17. Nassau- Dutchess	* *	SS SS	SS1
	18. Dutchess- Nassau	* *	SS SS	SS1
	19. Bernardston- Pittstown	*	NS NS	NS

Washington County

1. Soils that formed on water-deposited material on floodplains.	1. Hadley- Winooski- Limerick	11.8 19.6 *	SS NS NS	NS
2. Soils that formed in water-deposited material on terraces and old lake plains.	2. Windsor	6.0	S	
	3. Hartland- Belgrade	25.9 *	NS NS	NS
3. Soils that formed in glacial till in the Green Mountains and on uplands.	4. Lyman- Marlow- Peru	* 27.1 20.9	SS NS NS	NS
	5. Peru- Marlow	20.9 27.1	NS NS	NS
	6. Peru- Cabot- Marlow	20.9 16.3 27.1	NS NS NS	NS
	7. Muck and Peat- Peacham	* *	NS NS	NS

VERMONT

Washington County

4. Soils that formed in glacial till on mountains and uplands in the eastern part of the county.	8. Glover- Calais	* 17.9	SS NS	SS2
	9. Calais- Buckland	17.9 *	NS SS	NS

LaMoille County

1. Soils that formed in water-deposited material on floodplains.	1. Limerick- Hadley- Winooski	* 11.8 19.6	NS SS NS	NS
2. Soils that formed in water-deposited material on terraces and old lake plains.	2. Windsor	6.0	S	S1
	3. Hartland	25.9	NS	NS
	4. Munson- Buxton- Belgrade	* 20.5 *	NS NS NS	NS
3. Soils that formed in glacial till in the Green Mountains and on uplands.	5. Lyman- Marlow- Peru	* 27.1 20.9	SS NS NS	NS
	6. Peru- Marlow	20.9 27.1	NS NS	NS
	7. Cabot- Peru	16.3 20.9	NS NS	NS
4. Soils formed in organic material in depressions.	8. Muck and Peat	*	NS	NS

Essex County

1. Soils that formed in loamy glacial till on uplands and mountains.	1. Lyman- Marlow- Peru	* 27.1 20.9	SS NS NS	NS
	2. Peru- Marlow	20.9 27.1	NS NS	NS
	3. Cabot- Peru	16.3 20.9	NS NS	NS
	4. Much and Peat- Peacham	* *	NS NS	NS
2. Soils formed in water-deposited material on floodplains.	5. Limerick- Winooski	* 19.6	NS NS	NS

VERMONT

Essex County

3. Soils that formed in water-deposited material on terraces and old lake plains.	6. Windsor	6.0	S	S1
	7. Belgrade-	*	NS	NS
	Hartland	25.9	NS	

Orleans County

1. Soils that formed in glacial till on uplands and the Green Mountains.	1. Lyman-	*	SS	NS
	Marlow-	27.1	NS	
	Peru	20.9	NS	
	2. Paxton-	20.2	NS	NS
	Woodbridge	17.5	NS	
	3. Peru-	20.9	NS	NS
	Marlow	27.1	NS	
	4. Cabot-	16.3	NS	NS
	Peru	20.9	NS	
	5. Muck and Peat-	*	NS	NS
	Peacham	*	NS	
2. Soils that formed in glacial till on uplands mainly in the eastern part of the county.	6. Buckland-	16.0	NS	NS
	Calais	17.9	NS	
	7. Cabot-	16.3	NS	NS
	Buckland	16.0	NS	
	8. Glover-	*	SS	SS2
	Calais	17.9	NS	
3. Soils that formed in water-deposited sand, silty, or clayey material on terraces and old lake plains.	9. Limerick-	*	NS	NS
	Winooski	19.6	NS	
	10. Windsor	6.0	S	S1
	11. Scantic-	*	NS	NS
	Buxton	20.5	NS	
	12. Elmwood-	*	NS	NS
	Melrose	11.4	SS	

Windham County

1. Soils that formed in water-deposited materials on terraces and old lake plains.	1. Hadley-	11.8	SS	NS
	Winooski-	19.6	NS	
	Limerick	*	NS	
	2. Unadilla-	12.5	SS	SS1
	Windsor-	6.0	S	
	Merrimac	41.0	NS	
	3. Merrimac-	41.0	NS	NS
	Windsor	6.0	S	

VERMONT

Windham County

2. Soils that formed in glacial till in the Green Mountains and foothills.	4. Lyman-	*	SS	NS
	Marlow-	27.1	NS	
	Peru	20.9	NS	
	5. Marlow-	27.1	NS	NS
	Peru-	20.9	NS	
	Lyman	*	SS	
	6. Peru-	20.9	NS	NS
	Marlow-	27.1	NS	
	Lyman	*	SS	
	7. Peru-	20.9	NS	NS
	Cabot-	16.3	NS	
	Muck	*	NS	
3. Soils formed in glacial till on uplands in the eastern part of the county.	8. Woodstock-	*	SS	NS
	Paxton-	20.2	NS	
	Woodbridge	17.5	NS	
	9. Paxton-	20.2	NS	NS
	Woodbridge-	17.5	NS	
	Woodstock	*	SS	
	10. Woodbridge-	17.5	NS	NS
	Paxton-	20.2	NS	
	Woodstock	*	SS	
	11. Woodbridge-	17.5	NS	NS
	Cabot-	16.3	NS	
	Muck	*	NS	

Bennington County

1. Soils that formed in water-deposited and organic materials on terraces and old lake plains.	1. Hinckley-	7.4	SS	SS1
	Merrimac-	41.0	NS	
	Windsor	6.0	S	
	2. Copake-	*	-	SS1
	Windsor	6.0	S	
	3. Fredon-	*	NS	NS
	Halsey-	*	NS	
	Scantic	*	NS	
	4. Winooski-	19.6	NS	NS
	Limerick	*	NS	
	5. Hadley-	11.8	SS	NS
	Winooski-	19.6	NS	
	Limerick	*	NS	
	6. Muck-	*	NS	NS
	Peat	*	NS	

VERMONT

Bennington County

2. Soils that formed in glacial till in the Green Mountains and foothills.	7.	Lyman-	*	SS	NS
		Marlow-	27.1	NS	
		Peru	20.9	NS	
	8.	Marlow-	27.1	NS	NS
		Peru-	20.9	NS	
		Lyman	*	SS	
	9.	Marlow-	27.1	NS	NS
		Peru-	20.9	NS	
		Lyman	*	SS	
	10.	Peru-	20.9	NS	NS
		Marlow-	27.1	NS	
		Lyman	*	SS	
	11.	Peru-	20.9	NS	NS
		Cabot	16.3	NS	
3. Soils formed in glacial till on the slate and limestone uplands.	12.	Nellis-	*	NS	NS
		Amenia	18.1	NS	
	13.	Stockbridge-	15.1	NS	NS
		Amenia	18.1	NS	
	14.	Amenia-	18.1	NS	NS
		Kendaia-	*	NS	
		Lyons	*	NS	
	15.	Farmington-	*	NS	NS
		Nellis	*	NS	
	16.	Nassau-	*	SS	SS1
		Dutchess	*	SS	
	17.	Dutchess-	*	SS	SS1
		Nassau	*	SS	
	18.	Bernardston-	*	NS	NS
		Pittstown	*	NS	

TENNESSEE

K. Soils of the Unaka Mountains. (Inceptisols, Ultisols, Spodosols)				
1. Steep and very steep, loamy and stony soils at high elevations from metamorphic and igneous rocks and colluvium. (Dystrochrepts, Haplumbrepts, Spodosols)	58. Ditney-	*	SS	SS1
	Jeffrey-	*	SS	
	Brookshire	*	SS	
	59. Unaka-	*	SS	SS1
	Ashe	*	SS	
2. Steep and very steep, loamy and channery soils from phyllite, sandstone, quartzite and colluvium. (Dystrochrepts, Hapludults)	60. Sylco-	*	SS	SS1
	Ranger-	*	SS	
	Citico	*	SS	
	61. Wallen-	*	SS	SS1
	Jefferson-	5.5	S	
	Ramsey	*	SS	
3. Hilly and steep, loamy and stony soils from metamorphic and igneous rocks. (Hapludults, Dystrochrepts)	62. Ashe-	*	SS	SS1
	Halewood	*	SS	
	63. Talladega-	*	SS	SS1
	Fannin-	*	SS	
	Gullied land	-	-	
4. Undulating to hilly, loamy and clayey soils from colluvium, alluvium, shale, and limestone. (Hapludults, Paleudults, Hapludalfs)	64. Calvin-	*	SS	SS1
	Hayter-	*	SS	
	Dunmore	6.9	SS	
	65. Jefferson-	5.5	S	SS1
	Allen-	4.9	S	
	Statler	*	NS	

VIRGINIA

Land Resources	Soil Association	CEC	Suscept. Level	Assoc. Suscept. Rating
1. The Applachian Plateau	1. Hartsells-	*	SS	SS1
	Wellston-	*	SS	
	Coeburn-	*	-	
	Muskingum-	8.1	SS	
	Montevallo-	*	SS	
2. Mountains and uplands	2. Muskingum-	8.1	SS	SS1
	Montevallo-	*	SS	
	Jefferson-	5.5	S	
	Hayter-	*	SS	
	Allen-	4.9	S	
	Leadvale	*	SS	
3. Limestone valleys	3. Hagerstown-	*	NS	SS1
	Pisgah-	*	SS	
	Decatur-	*	SS	
	Dunmore-	6.9	SS	
	Frederick-	*	SS	
	Elliber-	5.7	S	
	Lodi-	*	SS	
	Bolton-	*	SS	
	Clarksville-	*	SS	
	Groseclose-	*	SS	
	Bland-	*	NS	
	Carbo-	*	NS	
	Chilhowie-	*	NS	
	Colbert-	*	NS	
	Westmoreland-	*	SS	
	Teas-	*	-	
	Litz-	*	SS	
	Berks-	16.9	NS	
	Tellico-	13.5	SS	
	Jefferson-	5.5	S	
	Allen-	4.9	S	
	Hayter-	*	SS	
	Huntington-	16.4	NS	
	Lindside-	17.9	NS	
	Melvin-	*	NS	
	Pope-	*	SS	
	Philo-	11.4	SS	
	Atkins-	19.2	NS	
	Cumberland-	10.2	SS	
	Elk-	*	SS	
	Captiva-	*	SS	
	Taft-	*	NS	
	Waynesboro-	8.9	SS	
	Halston-	*	SS	
	Monongahela	7.8	SS	

VIRGINIA

4. Blue Ridge Mountains (Sandstone and shale)	Rock land & Rock outcrops-	*	SS	
	Ramsey-	*	SS	
	Muskingum-	11.1	SS	SS1
	Lehew	4.0	S	
5. Blue Ridge Mountains (Crystalline Rocks)	Porters-	*	SS	
	Ashe-	*	SS	
	Fannin-	*	SS	
	Balfour-	*	-	
	Watauga-	*	SS	SS1
	Chandler-	*	SS	
	Talladega-	*	SS	
	Rabun-	*	SS	
	Clifton	*	SS	
6. Piedmont underlain by crystalline rocks.	Cecil-	8.4	SS	
	Appling-	*	SS	
	Durham-	*	SS	
	Colfax-	*	NS	
	Louisburg-	*	SS	
	Davidson-	*	SS	
	Mecklenburg-	*	NS	
	Iredell	*	NS	
	Lloyd-	*	-	
	Enon-	*	SS	
	Vance-	*	SS	
	Helena-	*	NS	
	Wilkes	*	NS	
	Madison-	*	SS	
	Louisa-	*	SS	
	Tatum-	*	SS	SS1
	Nason-	*	SS	
	Lignum-	*	NS	
	Manteo-	*	SS	
	Chester-	16.6	NS	
	Eubanks-	*	SS	
	Brandywine-	*	SS	
	Fauquier-	*	SS	
	Myersville-	*	SS	
	Catoctin-	*	SS	
	Elioak-	*	-	
	Glenelg-	22.2	NS	
	Monor-	13.7	SS	
	Culpeper	*	SS	
	Albemarle	*	SS	

VIRGINIA

7. Triassic area of the piedmont.	Wadesboro-	*	-	SS2
	Mayodan-	*	SS	
	Granville-	*	SS	
	Creedmoor-	*	NS	
	Bucks-	*	NS	
	Penn-	11.3	SS	
	Calverton-	*	NS	
	Croton-	*	NS	
	Brecknock-	10.8	SS	
	Catlett-	*	SS	
	Montalto-	*	SS	
	Ruxton-	*	-	
	Rapidan-	*	SS	
	Kelly-	*	NS	
	Athol	*	SS	
8. Carolina slate belt of southern Piedmont.	Georgeville-	*	SS	SS2
	Herndon-	*	SS	
	Almance-	*	SS	
	Orange-	*	NS	
	Congaree-	*	SS	
	Chewacla-	*	NS	
	Wehadkee-	*	NS	
	Starr-	*	SS	
	Seneca-	*	-	
	Meadowville-	*	SS	
	Wickham-	*	SS	
	Altavista-	*	NS	
	Augusta-	*	NS	
	Roanoke-	*	NS	
	Hiwassee-	*	SS	
	Masada	*	SS	
9. Chesapeake Bay region of Coastal Plains.	Galestown-	6.1	SS	SS2
	Klej-	*	NS	
	Plummer-	*	NS	
	Rutledge-	*	NS	
	Sassafras-	6.4	SS	
	Woodstown-	8.9	SS	
	Dragstown-	*	NS	
	Fallsington-	*	NS	
	Matapeake-	14.8	SS	
	Caroline-	*	SS	
	Atlee-	*	NS	
	Mattapex-	12.3	SS	
	Bertie-	*	NS	
	Othello-	*	NS	
	Elkton-	*	NS	
	Portsmouth-	*	NS	
	Beltsville-	*	SS	
	Fairfax	*	SS	

VIRGINIA

10. Middle Coastal Plain	Norfolk-	3.9	S	
	Ruston-	5.7	S	
	Onslow-	*	SS	
	Craven-	*	NS	SS1
	Lenoir-	*	NS	
	Bladen	11.0	SS	
11. Flatwoods area	Portsmouth-	*	NS	
	Bayboro-	39.9	NS	
	Pocomoke-	*	NS	
	Galestown-	6.1	SS	
	Klej-	*	NS	
	Plummer-	*	NS	
	Rutledge-	*	NS	
	Fallsington-	*	NS	
	Dragston-	*	NS	NS
	Woodstown-	8.9	SS	
	Sassafras-	6.4	SS	
	Elkton-	*	NS	
	Othello-	*	NS	
	Keyport-	*	NS	
	Bertie-	*	NS	
	Mattapex-	12.3	SS	
	Matapeake	14.8	SS	

WEST VIRGINIA

Land Resource	Soil Association	CEC	Suscept. Level	Assoc. Suscept. Rating
1. North Blue Ridge Mountains	1. Edgemont	*	S	S1
2. Great Limestone Valley	2. Hagerstown-	*	NS	NS
	Frederick-	15.7	NS	
	Frankstown	15.8	NS	
	3. Berks Shale Belt	16.9	NS	NS
3. Potomac Ridge and Valley Area	4. Dekalb-	17.3	NS	SS2
	Lehew-	4.0	S	
	Laidig	12.9	SS	
	5. Ashby-	*	-	NS
	Calvin-	12.5	SS	
	Litz Ridges	20.6	NS	
	6. Corydon-	15.2	NS	NS
	Elliber limestone	5.7	S	
	7. Huntington-	16.4	NS	NS
	Lindside-	17.9	NS	
	Monongahela	7.8	SS	
4. Allegheny Mountains	8. Dekalb Mountains	*	-	SS1
	9. Ashby	*	-	NS
	10. Monongahela-	7.8	SS	NS^{o}
	Pope terrace & bottomlands	3.0	S	
	11. Philo-	11.4	SS	NS^{o}
	Atkins-	19.2	NS	
	Melvin	17.3	NS	
	12. Stony Hagerstown-	*	NS	NS
	Belmont	22.9	NS	
	13. Calvin-	12.5	SS	SS2
	Litz shale hills	20.6	NS	
	14. Elliber-	5.7	S	SS1
	Vira	*	-	
	15. Lodi-	*	-	NS
	Laidig	12.9	SS	

WEST VIRGINIA

5. Greenbrier Limestone Valley	16. Hagerstown- Frankstown- Frederick	* 15.8 15.7	NS NS NS	NS
6. Southern West Virginia Shale Ridges	17. Dunmore- Murrill- Laidig	7.4 6.9 12.9	SS SS SS	SS1
	18. Westmoreland- Litz- Clarksburg	12.0 20.6 13.8	SS NS SS	SS
	19. Dekalb- Clymer- Cookport	17.3 16.3 7.6	NS NS SS	NS
	20. Frankstown- Frederick- Murrill	15.8 15.7 6.9	NS NS SS	NS
	21. Calvin- Litz shale hills	12.5 20.6	SS NS	
	22. Tilsit Plateau	5.3	S	S1
	23. Atkins	19.2	NS	NS
7. West Central Pennsylvania Northern West Virginia Plateau	24. Gilpin- Wharton- Ernest	12.3 10.6 11.0	SS SS SS	SS1
8. Tri-State Tablelands	25. Gilpin- Rayne- Wharton	12.3 5.0 10.6	SS S SS	SS1
	26. Clymer- Dekalb- Plateau	16.3 17.3 *	NS NS -	NS
	27. Dekalb Mountains and Cheat Gorge	* *	SS SS	SS1
9. Monongahela-Ohio Section	28. Channery Gilpin- Calvin Plateau	12.3 12.5	SS SS	SS1
	29. Westmoreland- Brooke Plateau	12.0 20.3	SS NS	SS2
	30. Gilpin- Upshur- Westmoreland- Hackers	12.3 31.4 12.0 *	SS NS SS -	NS^{o}

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	31. Gilpin	12.3	SS	SS1
	32. Westmoreland-	12.0	SS	SS1
	Gilpin	12.3	SS	
	33. Gilpin-	12.3	SS	NS^{+}
	Upshur	31.4	NS	
	34. Gilpin Ridge	12.3	SS	SS1
	35. Gilpin-	12.3	SS	NS^{+}
	Westmoreland	12.0	SS	
	36. Westmoreland-	12.0	SS	NS^{+}
	Gilpin-	12.3	SS	
	Upshur (Meigs)-	31.4	NS	
	Moshannon	15.5	NS	
10. Little Kanawha-Elk Hills	37. Muskingum	8.1	SS	NS^{o}
	Upshur (Meigs)	31.4	NS	
	38. Gilpin-	12.3	SS	NS^{o+}
	Upshur Ridges	31.4	NS	
	39. Muskingum-	8.1	SS	NS^{o+}
	Upshur	31.4	NS	
	40. Vincent Terrace	10.0	SS	SS1
11. Chestnut Ridge Plateau	41. Gilpin-	12.3	SS	NS^{o+}
	Upshur Hills	31.4	NS	
	42. Dekalb Mountains	*	SS	SS1
	43. Dekalb-	17.3	NS	SS1
	Cookport Plateau	7.6	SS	
	44. Ashby-	*	-	SS1
	Gilpin Hills	12.3	SS	
	45. Pope	3.0	S	NS^{o}
	Atkins	19.2	NS	
	Tyler	*	-	
	Ashby	*	-	
	46. Dekalb-	17.3	NS	NS
	Belmont Mountains	22.9	NS	
	47. Belmont-Limestone Sinks	22.9	NS	NS
	48. Blago-	44.2	NS	NS
	Belmont-	22.9	NS	
	Clymer	16.3	NS	
	49. Dekalb-	17.3	NS	NS
	Lickdale Rocky Mountain and Plateau	20.2	NS	

	50. Atkins-	19.2	NS	
	Elkins-	38.9	NS	NS
	Cranberry Glade	*	-	
12. Raleigh-Fayette Plateau	51. Dekalb-	17.3	NS	
	Gilpin-	12.3	SS	SS1
	Wharton Plateau	10.6	SS	
	52. Atkins-	19.2	NS	NS
	Lickdale Glades	20.2	NS	
	53. Dekalb Mountains	*	SS	SS1
	54. Dekalb	17.3	NS	NS
13. Ohio-West Virginia Foothills	55. Muskingum-	8.1	SS	NS^{+}
	Upshur (Meigs)	31.4	NS	
	56. Wyatt-	*	-	
	Monongahela	7.8	SS	NS
	Teays Valley	*	-	
	57. Huntington Industrial Area	16.4	NS	NS
	58. Wheeling-	10.5	SS	
	Huntington-	16.4	NS	NS^{o}
	Ashton-	*	-	
	Ohio River Terrace and Bottomlands	*	-	
	59. Upshur-	31.4	NS	NS
	Muskingum (Meigs) clayhills	8.1	SS	
	60. Monongahela-	7.8	SS	
	Tyler and	*	-	
	Muskingum-	8.1	SS	NS
	Upshur	31.4	NS	
	Upper Flats			
	61. Ashton-	*	-	
	Melvin-	17.3	NS	NS^{o+}
	Zoar	13.6	SS	
	Area of Kanawha River			
	62. Monongahela-	7.8	SS	
	Tyler-	*	-	
	Wyatt	*	-	NS^{o}
	Moshannon	15.5	NS	
	Terraces & bottomlands			
	of little Kanawha River			NS^{o}
	63. Brooke-	20.3	NS	
	Westmoreland-	12.0	SS	NS^{+}
	Upshur Limestone Hills	31.4	NS	

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14. Southern West Virginia Coal Fields	64. Muskingum	8.1	SS	SS1
	65. Sequatchie- Monongahela Valley of Oceana	* 7.8	- SS	NS[o]
	66. Muskingum and Muskingum- Upshur (Meigs)	8.1 8.1 31.4	SS SS NS	SS1

NS - above 15 CEC (not susceptible) → Not Susceptible

SS - above 6 CEC (slightly susceptible) → Slightly Susceptible

S - below 6 CED (susceptible) → Susceptible

* No CEC available

[o] Floodplain

[+] Lime influenced

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Land Resource	Soil Association	CEC	Suscept. Level	Assoc. Suscept. Rating
A. Soils of the southwestern ridges and valleys				
1. Undulating, rolling, and hilly soils on limestone ridges with shale in places.	1. Tama-	28.1	NS	NS
	Ashdale-	*	NS	
	Downs-	*	NS	
	Muscatine	36.3	NS	
	2. Dodgeville-	*	NS	NS
	Ashdale	*	NS	
	Sogn	*	NS	
	3. Dubuque-	*	NS	NS
	Palsgrove-	15.4	NS	
	Sogn-	*	NS	
	Dodgeville	*	NS	
	4. Schapville-	*	NS	NS
	Derinda-	*	NS	
	Vlasaty-	*	NS	
	Calamine	*	NS	
2. Gently rolling to very steep soils on limestone ridges or on quartzite uplands	5. Fayette-	12.6	SS	NS
	Palsgrove-	15.4	NS	
	Dubuque	*	NS	
	6. Palsgrove-	15.4	NS	NS
	Dubuque-	*	NS	
	Fayette	12.6	SS	
	7. Fayette-	12.6	SS	SS2
	Seaton	16.3	NS	
	8. Seaton-	16.3	NS	NS
	Palsgrove-	15.4	NS	
	Dubuque	*	NS	
	9. Dubuque-	*	NS	NS
	Palsgrove	15.4	NS	
	10. Baraboo-	*	NS	NS
	Skillet	*	-	

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3. Nearly level to sloping soils on stream terraces	11.	Richwood-	22.5	NS	NS
		Toddville-	*	NS	
		Bertrand	*	NS	
	12.	Bertrand-	*	NS	NS
		Curran-	*	NS	
		Arenzville-	*	SS	
		Dakota-	*	NS	
		Meridian	6.2	SS	
	13.	Tell-	*	SS	NS
		Curran-	*	NS	
		Ettrick	*	NS	
	14.	Dakota-	*	NS	NS
		Onamia-	7.0	SS	
		Waukegan-	*	NS	
		Antigo	*	NS	
B. Soils of the Southeastern Upland.					
1. Hilly to rolling soils of drumlens, moraines and bedrock.	15.	Knowles-	*	NS	NS
		Morley	15.7	NS	
	16.	Hocheim-	*	NS	NS
		Theresa-	*	NS	
		Brookston	31.3	NS	
	17.	Pecatonica-	*	NS	NS
		Flagg-	*	NS	
		Baraboo	*	NS	
2. Hilly to rolling soils of moraines and terrace escarpments.	18.	Casco-	*	SS	SS2
		Rodman-	*	NS	
		Fox-	14.2	SS	
		Lapeer	*	NS	
3. Rolling to undulating soils of glaciated uplands.	19.	Ringwood-	24.0	NS	NS
		Durand-	*	NS	
		Ripon	*	NS	
	20.	Dubuque-	*	NS	NS
		Pecatonica-	*	NS	
		McHenry-	17.5	NS	
		Whalan	*	NS	
	21.	Pecatonica-	*	NS	NS
		Dodge-	16.2	NS	
		McHenry-	17.5	NS	
		Whalan	*	NS	
	22.	Lapeer-	*	NS	NS
		McHenry-	17.5	NS	
		Miami	17.0	NS	

	23. Morley-	15.7	NS	NS
	Blount-	20.8	NS	
	Varna-	34.0	NS	
	Ashkum	44.2	NS	
	24. Flagg-	*	NS	NS
	Pecatonica-	*	NS	
	Mingo	*	NS	
	25. Miami-	17.0	NS	NS
	McHenry-	17.5	NS	
	Crosby-	20.3	NS	
	Brookston	31.3	NS	
	26. Theresa-	*	NS	NS
	Hochheim-	*	NS	
	Nenno	*	NS	
	27. Miami-	17.0	NS	NS
	Dodge-	16.2	NS	
	Pella	*	NS	
	28. McHenry	17.5	NS	NS
	Lapeer-	*	NS	
	Miami-	17.0	NS	
	Brookston	31.3	NS	
	29. Lapeer-	*	NS	NS
	Pardeeville-	11.3	SS	
	Boyer-	*	NS	
	McHenry	17.5	NS	
	30. Knowles-	*	NS	NS
	Ripon-	*	NS	
	Casco-	*	SS	
	Sisson	*	NS	
	31. Theresa-	*	NS	NS
	Onaway-	15.1	NS	
	Fox-	14.2	SS	
	Salter	*	SS	
	32. Fox-	14.2	SS	SS2
	Casco-	*	SS	
	St. Charles	*	NS	
4. Gently undulating to rolling soils of glaciated uplands	33. Morley-	15.7	NS	NS
	Blount-	20.8	NS	
	Ozaukee-	20.6	NS	
	Ashkum	44.2	NS	
	34. Varma-	34.0	NS	NS
	Elliott-	*	NS	
	Ashkum	44.2	NS	
	35. Ogle-	*	NS	NS
	Durand-	*	NS	
	Pella	*	NS	

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	36. Plano-	25.4	NS	NS
	Saybrook-	*	NS	
	Ringwood-	24.0	NS	
	Elburn-	*	NS	
	Pella	*	NS	
	37. Miami-	17.0	NS	NS
	McHenry-	17.5	NS	
	Brookston	31.3	NS	
	38. Theresa-	*	NS	NS
	Hochheim-	*	NS	
	Nenno	*	NS	
	39. St. Charles-	*	NS	NS
	Dodge-	16.2	NS	
	Miami-	17.0	NS	
	Pella	*	NS	
	40. Metea-	*	NS	NS
	Puchyan-	*	NS	
	Miami-	17.0	NS	
	Lapeer	*	NS	
	41. Lomira-	*	NS	NS
	LeRoy-	*	NS	
	Knowles	*	NS	
	42. Lapeer-	*	NS	NS
	Pardeeville-	11.3	SS	
	McHenry	17.5	NS	
	43. Dodge-	16.2	NS	NS
	Lomira-	*	NS	
	Knowles	*	NS	
	44. Fox-	14.2	SS	SS2
	Casco-	*	SS	
	Boyer	*	NS	
	45. Fox-	14.2	SS	SS2
	Will-	*	SS	
	Casco-	*	SS	
	Fabius	*	NS	
5. Nearly level and gently undulating soils of outwash plains and uplands.	46. Plano-	25.4	NS	NS
	St. Charles-	*	NS	
	Warsaw-	25.9	NS	
	Fox	14.2	SS	
	47. Fox	14.2	SS	NS
	Hebron-	*	NS	
	Del Rey	*	-	
	48. Fox	14.2	SS	NS
	St. Charles	*	NS	
	McHenry	17.5	NS	

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C. Soils of the Central Sandy Uplands and Plains

1. Rolling, hilly undulating, and nearly level soils of uplands and plains	49.	Oshtemo-	6.3	SS	SS1
		Gotham-	*	SS	
		Plainfield	5.5	S	
	50.	Mecan-	4.0	S	S2
		Wyocena-	*	S	
		Plainfield-	5.5	S	
		Gotham	*	SS	
	51.	Plainfield-	5.5	S	S2
		Gotham-	*	SS	
		Wyocena	*	S	
2. Nearly level and undulating soils of plains with included hilly and steep outliers of sandstone.	52.	Boone-	5.3	S	S2
		Plainfield	5.5	S	
		Au Gres-	11.2	SS	
		Nekoosa	*	-	
3. Nearly level and gently undulating soils of stream terraces and long narrow outwash plains.	53.	Sparta-	7.0	SS	SS1
		Plainfield-	5.5	S	
		Gotham	*	SS	
	54.	Plainfield-	5.5	S	SS1
		Sparta-	7.0	SS	
		Gotham	*	SS	
	55.	Meridian-	6.2	SS	SS1
		Plainfield-	5.5	S	
		Sparta-	7.0	SS	
		Shiffer	*	SS	
	56.	Sparta-	7.0	SS	SS2
		Dakota-	*	NS	
		Meridian	6.2	SS	
	57.	Dakota-	*	NS	SS2
		Onamia-	7.0	SS	
		Meridian-	6.2	SS	
		Burkhardt	*	SS	
4. Nearly level and undulating soils of broad outwash plains.	58.	Plainfield-	5.5	S	SS1
		Kellner-	6.6	SS	
		Newton	*	SS	
	59.	Plainfield-	5.5	S	S2
		Gotham	*	SS	
	60.	Nekoosa-	*	-	SS1
		Plainfield-	5.5	S	
		Newton	*	SS	

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61.	Nekoosa-	*	-	SS1
	Morocco-	*	NS	
	Granby-	*	NS	
	Plainfield	5.5	S	
62.	Plainfield-	5.5	S	SS1
	Nekoosa-	*	-	
	Newton	*	SS	
63.	Plainfield-	5.5	S	S2
	Richford-	3.3	S	
	Kellner-	6.6	SS	
	Dakota	*	NS	
64.	Dakota-	*	NS	NS
	Onamia	7.0	SS	
65.	Guenther-	*	SS	SS2
	Dancy-	*	NS	
	Nekoosa-	*	-	
	Newton	*	SS	
66.	Delton-	*	NS	NS
	Alban-	*	NS	
	Wyeville	*	NS	

D. Soils of the Western Sandstone Uplands, Valley Slopes, and Plains.

1. Steep to rolling soils on partially dissected uplands underlain by sandstone and some limestone.	67.	Gale-	*	SS	SS2
		Norden-	15.7	NS	
		Hixton-	*	SS	
		Fayette-	12.6	SS	
		Seaton	16.3	NS	
2. Hilly, rolling and steep soils on dissected sandstone uplands.	68.	Norden-	15.7	NS	SS2
		Gale-	*	SS	
		Fayette-	12.6	SS	
		Hixton	*	SS	
	69.	Gale-	*	SS	SS2
		Norden-	15.7	NS	
		Fayette	12.6	SS	
	70.	Norden-	15.7	NS	SS2
		Hixton-	*	SS	
		Northfield-	*	NS	
		Boone	5.3	S	
	71.	Hixton-	*	SS	SS1
		Northfield-	*	NS	
		Gale-	*	SS	
		Boone	5.3	S	

	72. Boone-	5.3	S	S2
	Northfield	*	NS	
	73. Hixton-	*	SS	SS1
	Arland-	6.3	SS	
	Gale-	*	SS	
	Norden	15.7	NS	
3. Gently rolling and rolling soils on sandstone uplands.	74. Merrillan-	*	NS	NS
	Boone-	5.3	S	
	Northfield-	*	NS	
	Elm Lake-	*	NS	
	Arland	6.3	SS	
	75. Hixton-	*	SS	SS1
	Gale-	*	SS	
	Northfield-	*	NS	
	Arland-	6.3	SS	
	Milaca	8.3	SS	
	76. Hixton-	*	SS	SS1
	Onamia-	7.0	SS	
	Chetek	*	SS	
4. Nearly level and undulating soils on sandstone plains.	77. Elm Lake-	*	NS	NS
	Merrillan-	*	NS	
	Humbird-	*	SS	
	Boone-	5.3	S	
	Northfield	*	NS	
	78. Merrillan-	*	NS	NS
	Elm Lake-	*	NS	
	Humbird	*	SS	
	79. Kert-	*	NS	SS2
	Vesper-	*	SS	
	Veedum	*	SS	
E. Soils of the Northern and Eastern Sandy and Loamy Reddish drift Uplands and Plains.				
1. Soils of rolling to undulating uplands.	80. Emmet-	5.0	S	SS1
	Onaway-	15.1	NS	
	Omega	9.7	SS	
	81. Onaway-	15.1	NS	NS
	Solona-	*	NS	
	Emmet-	5.0	S	
	Underhill-	*	NS	
	Angelica	*	NS	

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2. Soils of undulating uplands.	82. Emmet-	5.0	S	SS2
	Onaway-	15.1	NS	
	Solona-	*	NS	
	Angelica-	*	NS	
	Omega	9.7	SS	
	83. Onaway-	15.1	NS	NS
	Underhill-	*	NS	
	Emmet-	5.0	S	
	Alban-	*	NS	
	Solona	*	NS	
	84. Solona-	*	NS	NS
	Onaway-	15.1	NS	
	Hortonville-	*	NS	
	Shiocton-	*	NS	
	Angelica	*	NS	
	85. Longrie-	*	NS	NS
	Summerville-	*	NS	
	Onaway-	15.1	NS	
	Bonduel	*	NS	
	86. Onaway-	15.1	NS	NS
	Longrie-	*	NS	
	Detour	*	NS	
3. Soils of nearly level plains.	87. Shiocton-	*	NS	NS
	Tristin-	*	NS	
	Shawano-	*	SS	
	Oshkosh-	30.6	NS	
	Poygan	54.2	NS	
	88. Underhill-	*	NS	NS
	Onaway-	15.1	NS	
	Angelica-	*	NS	
	Wauseon	*	NS	
	89. Delton-	*	NS	NS
	Wyeville-	*	NS	
	Poygan	54.2	NS	
	90. Tustin-	*	NS	NS
	Shiocton-	*	NS	
	Kibbie	*	NS	
	91. Shawano-	*	SS	SS2
	Keowns-	*	NS	
	Granby-	*	NS	
	AuGres	11.2	SS	
	92. Shawano-	*	SS	SS1
	Granby	*	NS	

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F. Soils of the Northern Silty Uplands and Plains.

1. Soils of rolling to undulating uplands.	93. Lafont-	22.9	NS	NS
	Clifford	*	NS	
	Auburndale	20.2	NS	
	94. Santiago-	12.5	SS	SS2
	Freer-	*	NS	
	Milaca-	8.3	SS	
	Cable	*	SS	
	95. Freeon-	*	NS	NS
	Freer-	*	NS	
	Almena-	19.8	NS	
	Adolph	36.7	NS	
	96. Norrie-	*	NS	NS
	Kennan-	*	-	
	Onamia	7.0	SS	
	97. Stambaugh-	*	SS	NS
	Goodman-	*	NS	
	Padus-	*	NS	
	Iron River	*	NS	
	98. Antigo-	*	SS	SS2
	Norrie-	*	NS	
	Onamia-	7.0	SS	
	Kennan	*	-	
	99. Cushing-	*	NS	NS
	Alstad-	*	NS	
	Bluffton	*	NS	
	100. Jewett-	*	NS	NS
	Waukegan-	*	SS	
	Dakota	*	NS	
2. Soils of undulating uplands.	101. Clifford-	*	NS	NS
	Auburndale	20.2	NS	
	102. Santiago-	12.5	SS	SS2
	Freeon-	*	NS	
	Freer-	*	NS	
	Milaca-	8.3	SS	
	Dable	*	SS	
	103. Loyal-	*	NS	SS2
	Withee-	13.8	SS	
	Arland-	6.3	SS	
	Marshfield	26.0	NS	

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	104.	Spencer-	20.8	NS	NS
		Almena-	19.8	NS	
		Auburndale-	20.2	NS	
		Adolph	36.7	NS	
	105.	Renova-	*	NS	NS
		Ostrander-	*	NS	
		Sargent-	*	NS	
		Floyd	*	NS	
	106.	Fenwood-	*	NS	NS
		Marathon-	*	NS	
		Rozellville-	*	NS	
		Cable	*	SS	
	107.	Rozellville-	*	NS	NS
		Marathon-	*	NS	
		Rietbrock-	*	NS	
		Meade	*	-	
	108.	Stambaugh-	*	SS	NS
		Radus-	*	NS	
		Iron River	*	NS	
	109.	Antigo-	*	SS	SS2
		Onamia-	7.0	SS	
		Brill-	*	SS	
		Poskin	*	NS	
3. Soils of nearly level plains.	110.	Clifford-	*	NS	NS
		Auburndale	20.2	NS	
	111.	Clifford-	*	NS	NS
		Lafont-	22.9	NS	
		Auburndale	20.2	NS	
	112.	Freer-	*	NS	NS
		Freeon-	*	NS	
		Almena-	19.8	NS	
		Auburndale	20.2	NS	
	113.	Wither-	13.8	SS	NS
		Marshfield-	26.0	NS	
		Adolph	36.7	NS	
	114.	Almena-	19.8	NS	NS
		Auburndale-	20.2	NS	
		Spencer	20.8	NS	
	115.	Dolph-	*	NS	NS
		Altdorf	*	NS	
	116.	Stambaugh-	*	SS	SS2
		Padus-	*	NS	
		Pence-	*	SS	
		Iron River	*	NS	

	117. Antigo-	*	SS	SS1
	Brill-	*	SS	
	Onamia	7.0	SS	
	118. Poskin-	*	NS	SS2
	Brill-	*	SS	
	Antigo-	*	SS	
	Onamia	7.0	SS	
G. Soils of the Northern Loamy Uplands and Plains.				
1. Soils of hilly, rolling, to undulating uplands.	119. Gogebic-	*	NS	NS
	Iron River	*	NS	
	120. Iron River-	*	NS	NS
	Pence-	*	SS	
	Goodman-	*	NS	
	Monico-	*	NS	
	Stambaugh	*	SS	
	121. Iron River-	*	NS	SS2
	Pence-	*	SS	
	Vilas	*	SS	
	122. Milaca-	8.3	SS	SS1
	Cloquet-	*	SS	
	Pence-	*	SS	
	Vilas	*	SS	
	123. Kennan-	*	NS	NS
	Iron River-	*	NS	
	Pence-	*	SS	
	Vilas	*	SS	
	124. Kennan-	*	NS	NS
	Wyocena-	*	NS	
	Onamia	7.0	SS	
	125. Padus-	*	NS	SS2
	Pence-	*	SS	
	Vilas	*	SS	
	126. Chetek-	*	NS	NS
	Scandia-	*	-	
	Omega	9.7	SS	
2. Soils of rolling to undulating uplands with some broad valleys.	127. Gogebic-	*	NS	NS
	Marenisco-	*	-	
	Ahmeek	*	NS	
	128. Gogebic-	*	NS	NS
	Marenisco-	*	-	
	Ahmeek-	*	NS	
	Cable	*	SS	

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	129.	Iron River-	*	NS	SS2
		Padus-	*	NS	
		Pence-	*	SS	
		Vilas	*	SS	
	130.	Cloquet-	*	SS	SS2
		Gogebic-	*	NS	
		Pence	*	SS	
	131.	Milaca-	8.3	SS	SS2
		Cloquet-	*	SS	
		Iron River-	*	NS	
		Cable	*	SS	
	132.	Kennan-	*	NS	NS
		Iron River-	*	NS	
		Pence	*	SS	
	133.	Kennan-	*	NS	NS
		Wyocena-	*	NS	
		Onamia-	7.0	SS	
		Bevent	*	NS	
	134.	Padus-	*	NS	SS2
		Pence-	*	SS	
		Omega-	9.7	SS	
		Stambaugh	*	SS	
	135.	Pence-	*	SS	SS1
		Cloquet-	*	SS	
		Stambaugh	*	SS	
	136.	Pence-	*	SS	SS1
		Vilas	*	SS	
	137.	Onamia-	7.0	SS	NS
		Chetek-	*	NS	
		Dakota	*	NS	
3. Soils of undulating uplands.	138.	Gogebic-	*	NS	SS2
		Iron River-	*	NS	
		Cloquet-	*	SS	
		Vilas-	*	SS	
		Cable	*	SS	
	139.	Iron River-	*	NS	NS
		Gobebic-	*	NS	
		Cable	*	SS	
	140.	Milaca-	8.3	SS	SS1
		Cloquet-	*	SS	
		Santiago-	12.5	SS	
		Freer-	*	NS	
		Cable	*	SS	

	141.	Iron River- Gogebic- Monico- Marenisco	* * * *	NS NS NS -	NS
	142.	Kennan- Wyocena- Onamia	* * 7.0	NS NS SS	NS
	143.	Pence- Padus- Stambaugh- Vilas- Omega	* * * * 9.7	SS NS SS SS SS	SS1
	144.	Onamia- Chetek- Antigo	7.0 * *	SS NS SS	SS2
4. Soils of nearly level plains, pitted and unpitted.	145.	Pence- Vilas- Stambaugh- Padus-	* * * *	SS SS SS NS	SS1
	146.	Onamia- Chetek- Antigo	7.0 * *	SS NS SS	SS2
H. Soils of the Northern Sandy Uplands and Plains.					
1. Soils of hilly to rolling uplands.	147.	Vilas- Omega- Hiawatha- Pence	* 9.7 * *	SS SS - SS	SS1
2. Soils of rolling uplands.	148.	Vilas- Omega- Hiawatha	* 9.7 *	SS SS -	SS1
3. Soils of undulating uplands.	149.	Vilas Omega- Hiawatha- Pence	* 9.7 * *	SS SS - SS	SS1
	150.	Omega- Vilas- Pence	9.7 * *	SS SS SS	SS1

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4. Soils of nearly level plains.	151.	Vilas-	*	SS	SS1
		Omega-	9.7	SS	
		Pence	*	SS	
	152.	Omega-	9.7	SS	SS1
		Vilas-	*	SS	
		Chetek-	*	NS	
		Pence	*	SS	
	153.	Pence-	*	SS	SS1
		Omega-	9.7	SS	
		Au Gres	11.2	SS	
I. Soils of the Northern and Eastern Clayey and Loamy Reddish Drift Uplands and Plains.					
1. Soils of rolling to hilly uplands.	154.	Hibbing-	*	NS	NS
		Leonidas-	*	-	
		Superior-	*	NS	
		Ogemaw	*	NS	
	155.	Hibbing-	*	NS	NS
		Pickford-	*	NS	
		Ontonagon	*	NS	
		Bibon	*	SS	
	156.	Kolberg-	*	NS	NS
		Summerville-	*	NS	
		Kewaunee	18.4	NS	
2. Soils of rolling to undulating uplands.	157.	Kewaunee-	18.4	NS	NS
		Hortonville-	*	NS	
		Manawa-	37.4	NS	
		Poygan	54.2	NS	
	158.	Hortonville-	*	NS	NS
		Kewaunee-	18.4	NS	
		Manawa-	37.4	NS	
		Poygan	54.2	NS	
	159.	Onaway-	15.1	NS	NS
		Theresa-	*	NS	
		Hortonville-	*	NS	
		Fox-	14.2	SS	
		Casco	*	SS	

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3. Soils of undulating plains.	160.	Hibbing-	*	NS	NS
		Leonidas-	*	-	
		Gogebic-	*	NS	
		Bibon	*	SS	
	161.	Hibbing-	*	NS	NS
		Rudyard-	*	NS	
		Pickford-	*	NS	
		Hiawatha	*	-	
	162.	Superior-	*	NS	NS
		Orienta-	*	NS	
		Pickford-	*	NS	
		Manistee-	*	SS	
		Hiawatha	*	-	
	163.	Kewaunee-	18.4	NS	NS
		Manawa-	37.4	NS	
		Poygan	54.2	NS	
	164.	Kewaunee-	18.4	NS	NS
		Manawa-	37.4	NS	
		Poygan	54.2	NS	
	165.	Kewaunee-	18.4	NS	NS
		Manawa	37.4	NS	
	166.	Kewaunee-	18.4	NS	NS
		Manawa-	37.4	NS	
		Poygan-	54.2	NS	
		Hortonville-	*	NS	
		Tustin	*	NS	
	167.	Manawa-	37.4	NS	N
		Poygan-	54.2	NS	
		Rimer-	*	NS	
		Tustin	*	NS	
	168.	Kewaunee-	18.4	NS	NS
		Kolberg-	*	NS	
		Manawa	37.4	NS	
	169.	Hortonville-	*	NS	NS
		Manawa-	37.4	NS	
		Poygan-	54.2	NS	
		Shiocton	*	NS	
	170.	Briggsville-	*	NS	NS
		Poygan-	54.2	NS	
		Tustin-	*	NS	
		Lapeer	*	NS	

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4. Soils of nearly level plains.	171.	Hibbing-	*	NS	NS
		Rudyard-	*	NS	
		Pickford-	*	NS	
		Ontonagon-	*	NS	
		Superior	*	NS	
	172.	Ontonagon-	*	NS	NS
		Hibbing-	*	NS	
		Rudyard-	*	NS	
	173.	Kewaunee-	18.4	NS	NS
		Oshkosh-	30.6	NS	
		Manawa-	37.4	NS	
		Poygan	54.2	NS	
	174.	Oshkosh-	30.6	NS	NS
		Manawa-	37.4	NS	
		Poygan-	54.2	NS	
		Tustin-	*	NS	
	175.	Braham-	*	NS	NS
		Blomford-	*	NS	
		Dalbo	*	NS	
J. Soils of the Stream Bottoms and Major Wetlands.					
1. Soils of nearly level bottoms, with local cutbanks.	176.	Arenzville-	*	NS	NS
		Orion-	*	NS	
		Ettrick	*	NS	
	177.	Wet alluvial soils	*	NS	NS
	178.	Granby-	*	NS	SS1
		Shawano-	*	SS	
		Emmet	4.3	S	
	179.	Newton-	*	SS	SS1
		Plainfield-	5.5	S	
		Morocco	*	SS	
	180.	Newton-	*	SS	SS1
		Morocco-	*	SS	
		Au Gres	11.2	SS	
	181.	Cable-	*	SS	NS
		Monico-	*	NS	
		Auburndale-	20.2	NS	
		Freer	*	NS	
	182.	Wauseon-	*	NS	NS
		Keowns-	*	NS	
		Tustin-	*	NS	
		Rimer	*	NS	

	183. Pella-	*	NS	
	Brookston-	31.3	NS	NS
	Virgil	*	NS	
	184. Matherton-	*	SS	
	Will-	*	SS	SS1
	Pella	*	NS	
	185. Navan-	*	NS	
	Hebron-	*	NS	NS
	Aztalan-	*	NS	
	Pella	*	NS	
	186. Zittau-	*	NS	
	Poygan-	54.2	NS	NS
	Poy-	*	NS	
	Borth	*	NS	
3. Wet organic soils of nearly level plains.	187. Moss peat over acid sedge and woody peat soils-	*	NS	
	Au Gres-	11.2	SS	NS
	Cable	*	SS	
	188. Raw acid sedge and woody peat soils with thin moss covering-	*	NS	
	Cable-	*	SS	NS
	Freer	*	NS	
	189. Acid sedge peat and muck soils-	*	NS	
	Au Gres-	11.2	SS	SS2
	Newton-	*	SS	
	Morocco	*	SS	
	190. Slightly acid to alkaline sedge and woody peat and muck soils-	*	NS	
	Pella-	*	NS	NS
	Poygan-	54.2	NS	
	Brookston	31.3	NS	

APPENDIX B

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